

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

FUMA INTERNATIONAL, LLC,

Plaintiff,

v.

R.J. REYNOLDS VAPOR COMPANY,

Defendant.

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Case No. 1:19-CV-00260-CCE-JEP

OPENING EXPERT REPORT
STEPHEN A. HOLZEN

JULY 23, 2020

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B. R.J. REYNOLDS VAPOR COMPANY

54. Founded in April 2012, RJRV is an e-cigarette company based in Winston-Salem, North Carolina.¹¹⁶¹¹⁷ The company is a subsidiary of RAI and a sister company to RJRTC¹¹⁸ RJRV first offered an e-cigarette in limited distribution in 2012.¹¹⁹ RJRV then expanded product availability to the state of Colorado in 2013.¹²⁰
55. RJRV was created as part of a broader strategy to move away from traditional cigarette products.¹²¹ According to Mr. Daniel Delen (“Mr. Delen”), a former consultant to RAI, the transformation began in 2004 when RJRTC merged with Brown & Williamson under the R.J. Reynolds name.¹²² Then in 2006, RAI acquired Conwood (aka the American Snuff Company) and then subsequently had a national launch of its first Snus product (a product that is similar to snuff tobacco).¹²³ In 2009, RAI started testing dissolvable tobacco products and acquired Nicovum (a nicotine replacement therapy product).¹²⁴ Then in 2012, RAI created RJRV as a subsidiary entity which subsequently launched its first e-cigarette under the Vuse brand name.¹²⁵

VII. OVERVIEW OF THE RELEVANT PRODUCTS

56. The following section provides an overview of Fuma’s Embodying Products and RJRV Accused Products.

A. PLAINTIFF’S EMBODYING PRODUCTS

57. Fuma introduced a new e-cigarette device, under the Fuma brand name, in August 2009.¹²⁶ In September 2009, Fuma offered its e-cigarette for sale.¹²⁷ Fuma recorded its first sale of its e-cigarette product in September 2009.¹²⁸ I understand that Fuma commercializes the Patents-in-Suit by incorporating them into the following products (the “Embodying Products”).¹²⁹

| Embodying Products |
|--|
| Fuma Tobacco eCig Cartridges, Full, Gold, & Silver |
| Fuma Menthol eCig Cartridges, Full, Gold & Silver |

¹¹⁶ <https://www.bizjournals.com/triad/print-edition/2012/11/30/big-tobacco-betting-on-e-cigarette.html>

¹¹⁷ <https://www.bloomberg.com/profile/company/1452959D:US>;

¹¹⁸ <https://www.sec.gov/Archives/edgar/data/1275283/000119312513050521/d449654dex211.htm>

¹¹⁹ https://www.journalnow.com/business/article_cf223198-c21f-5b4e-8e7b-c5fb6190dcad.html

¹²⁰ https://www.journalnow.com/business/business_news/local/article_bb7b7a84-ceb2-11e2-b775-0019bb30f31a.html;

¹²¹ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 5.

¹²² Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 6; IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, p. 20.

¹²³ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 6

¹²⁴ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 6

¹²⁵ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 6.

¹²⁶ Complaint for Patent Infringement dated March 6, 2019, p. 7.

¹²⁷ Complaint for Patent Infringement dated March 6, 2019, p. 7.

¹²⁸ Plaintiff’s Supplemental and Consolidated Responses to Defendant’s Interrogatories (Nos. 1-16) p.5.

¹²⁹ Defendant / Counterplaintiff R.J. Reynolds Vapor Company’s Fifth Supplemental Objections And Responses To Plaintiff’s Second Set Of Interrogatories (Nos. 6-13), the Holzen Marking Report, Discussion with Dr. Vallee; <https://myfumapatents.com/>

| Embodying Products |
|--|
| Fuma Colonial eCig Cartridges, Full, & Gold |
| Fuma Desert eCig Cartridges, Full & Gold |
| Fuma Deluxe Tobacco Starter Kit |
| Fuma Menthol Starter Kit |
| Fuma Quick Kit |
| Fuma Black E-cigarette & Cartridge, Tobacco Full |
| Fuma Black E-cigarette & Cartridge, Menthol Full |
| Fuma Black E-cigarette & Cartridge, Desert Full |
| Fuma F-209 Vape Pen |
| Fuma F-209 Mini Tank 2 Pack |
| Aero Cloud 40 Sub Ohm Kit |
| Sub Bomber Tank, Sub Bomber Atomizer |
| Aero TC 60 |
| TC 60 Tank, TC 60 Atomizer |
| Ninja 30-watt Mod |
| Shinobi Tank, Shinobi Atomizers |

B. DEFENDANT’S ACCUSED PRODUCTS

58. Presently, RJRV offers four e-cigarettes under the Vuse brand, including Solo, Ciro, Vibe, and Alto.¹³⁰ The Vuse vapor products are electronic nicotine delivery systems that heat liquids to create inhalable vapor.¹³¹ I have been informed that the Vuse Solo and the Vuse Ciro are accused of infringing the Patents-in-Suit (the “Accused Products”).¹³²

1. THE VUSE SOLO

59. The Vuse Solo is an e-cigarette¹³³ often called a “cig-a-like” because it is patterned after the form factor of a traditional cigarette.¹³⁴ As noted on RJRV’s website, the Solo “is about the same size, look and feel as a traditional cigarette” and the “sleek, compact unit houses” a battery.¹³⁵
60. RJRV launched the Vuse e-cigarette brand in a limited geographic area in 2012 with the Vuse disposable.¹³⁶ RJRV subsequently launched a version of the Vuse product with a rechargeable battery and detachable cartridge in 2013 that is marketed as the Vuse Solo.¹³⁷ The Vuse Solo is described as a “cartridge-based system for a simple-to-use alternative to cigarettes.”¹³⁸ The Vuse Solo refill cartridges are a closed system and as

¹³⁰ <https://www.rjrvapor.com/products/vapor> ; <https://vusevapor.com/faqs>

¹³¹ <https://www.rjrvapor.com/products/vapor>

¹³² Discussion with Dr. Vallee, Complaints.

¹³³ <https://vusevapor.com/solo-complete-kit>

¹³⁴ <https://vaping360.com/reviews/vuse-solo-review/>

¹³⁵ <https://vusevapor.com/solo-complete-kit>

¹³⁶ Fourth Supplemental Response to Fuma’s 2nd Set of Interrogatories to RJRV p. 11; RJRV-F000558696 to RJRV-F000558713 at 697-698.

¹³⁷ RJRV-F558696 to RJRV-F558713 at 703.

¹³⁸ <https://www.rjrvapor.com/products/vapor>

X. BACKGROUND OF THE DISPUTE

80. In the mid-1990s, more than 40 states commenced litigation against the Cigarette and Tobacco industry, seeking monetary, equitable, and injunctive relief under various consumer-protection laws.²⁰⁰ The general theory of these lawsuits was that cigarettes produced by the industry contributed to health problems, which in turn resulted in significant costs to the states' public health systems.²⁰¹ Faced with the ongoing defense of multiple actions nationwide, the four largest U.S. tobacco companies, Philip Morris, RJ Reynolds, Brown & Williamson and Lorillard ("OPMs"), entered into the MSA with 46 states' Attorneys Generals in November 1998.²⁰² As part of the MSA the OPMs agreed to restrict their advertising and sponsorship activities.²⁰³ The restrictions specified included bans on outdoor billboards, advertising on transit vehicles, as well as restrictions on sports marketing, event sponsorships and promotional products.²⁰⁴
81. Over the years, industry analysts noted an increased "awareness of the adverse health effects of smoking", as well as "increasing regulation" and "rising taxes."²⁰⁵ Together these factors negatively affected demand in the Cigarette and Tobacco industry.²⁰⁶ From 2008 to 2012, consumption of tobacco products was "consistently falling" with the biggest decline occurring in 2009."²⁰⁷ Industry analysts forecasted that demand for industry products would continue to decline through at least 2017.²⁰⁸
82. In an effort to quell criticism for their contribution to tobacco related diseases, and to gain market share in the growing market for cigarette substitutes, tobacco product manufacturers invested in research and development of less harmful tobacco products.²⁰⁹ As noted above, new product development in the tobacco industry has been ongoing since at least the 1960s, and continues today.²¹⁰
83. For example, in the 1980's and 1990's, RJRTC and Philip Morris were doing research on electrically powered tobacco based vapor products.²¹¹ RJRTC first released its first version of a smoking alternative in 1988 under the Premier brand name.²¹² This product worked by heating and aerosolizing a form of processed tobacco with added flavor.²¹³ The underlying technology is known as "heat-not-burn" technology. RJRTC discontinued Premier after less than a year because consumers did not like its charcoal aftertaste.²¹⁴ In 1994, RJRTC introduced a second generation version of its heat-not-burn technology

²⁰⁰ <https://www.publichealthlawcenter.org/sites/default/files/resources/MSA-Overview-2019.pdf>

²⁰¹ <https://www.publichealthlawcenter.org/sites/default/files/resources/MSA-Overview-2019.pdf>

²⁰² <https://www.publichealthlawcenter.org/sites/default/files/resources/MSA-Overview-2019.pdf>

²⁰³ <https://www.middleagemiracles.com/infamous-msa-pg-2.html>

²⁰⁴ <https://www.middleagemiracles.com/infamous-msa-pg-2.html>

²⁰⁵ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 5.

²⁰⁶ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 5.

²⁰⁷ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 5.

²⁰⁸ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 8.

²⁰⁹ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, page 34.

²¹⁰ RJRV-F000278651 to RJRV-F000278654 at 52.

²¹¹ RJRV-F000278651 to RJRV-F000278654 at 52.

²¹² RJRV-F000278651 to RJRV-F000278654 at 52.

²¹³ RJRV-F000278651 to RJRV-F000278654 at 52.

²¹⁴ RJRV-F000278651 to RJRV-F000278654 at 52.

under the Eclipse brand name.²¹⁵ The Eclipse was marketed as a safer alternative to traditional cigarettes however the product was discontinued shortly after it was launched.²¹⁶

84. In 2003, a Chinese pharmacist, Hon Lik, developed the first e-cigarette that used a piezoelectric element to vaporize liquid that contained nicotine; the e-cigarette was developed as an alternative way to inhale nicotine.²¹⁷ In 2004, Hon Lik introduced e-cigarettes to the Chinese market through his employer, the Golden Dragon Holdings (also known as Ruyan).²¹⁸ E-cigarettes were then introduced into the United States in 2007.²¹⁹
85. As traditional cigarette consumption continued to decline through the 2000s, tobacco manufacturers were incentivized to find ways to curb falling smoking rates.²²⁰ In 2007 and 2008, RJRTC began tracking new e-cigarettes and acquiring samples for analysis.²²¹ In late 2008, Reynolds Innovation Inc. was formed.²²² Its activities related to the exploration of a new “tobacco product, including vapor” as “part of its strategic and operating plan.”²²³ RJRTC then launched a research program in early 2009 which concluded that RJRTC should “actively pursue entering the Nicotine Replacement Therapy Market (the “NRT Market”).²²⁴ In June 2009, RJRTC contracted with third parties to lead an ideation process for new products in the vapor sector of the cigarette and tobacco industry.²²⁵
86. In the same year, Mr. Conley, Mrs. Conley and Mr. Hillenbrandt founded Fuma International LLC.²²⁶ The purpose of the company was to develop and commercialize a new and improved e-cigarette.²²⁷ Fuma introduced its new e-cigarette device to the marketplace in 2009.^{228 229}
87. Also in 2009, Congress enacted the Tobacco Control Act, which placed additional marketing restrictions on tobacco products.²³⁰ The law banned tobacco manufacturers from selling flavored cigarettes and from using the words “light” or “mild” on tobacco packaging.²³¹ The law also tightened restrictions on advertising and marketing.²³² According to industry analysts, these restrictions further contributed to lower brand

²¹⁵ RJRV-F000278651 to RJRV-F000278654 at 52.

²¹⁶ RJRV-F000278651 to RJRV-F000278654 at 52.

²¹⁷ <https://www.dentalcare.com/en-us/professional-education/ce-courses/ce451/the-history-of-e-cigarettes>

²¹⁸ <https://www.dentalcare.com/en-us/professional-education/ce-courses/ce451/the-history-of-e-cigarettes>

²¹⁹ <https://www.dentalcare.com/en-us/professional-education/ce-courses/ce451/the-history-of-e-cigarettes>

²²⁰ IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 5; IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, page 7.

²²¹ RJRV-F000695725 - RJRV-F000695726 at 25.

²²² RJRV-F000695725 - RJRV-F000695726 at 25.

²²³ RJRV-F000695725 - RJRV-F000695726 at 25.

²²⁴ RJRV-F000695725 - RJRV-F000695726 at 25.

²²⁵ RJRV-F000695725 - RJRV-F000695726 at 25.

²²⁶ <https://myfuma.com/pages/about-fuma-vapor>

²²⁷ Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660), pages 3-7.

²²⁸ Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660), pages 3-7.; Exhibit B of Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660)

²²⁹ Exhibits C and D of Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

²³⁰ IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 8.

²³¹ IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 8

²³² IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 8

visibility which placed additional downward pressure on demand for tobacco-based products.²³³

88. In 2010, the RJRTC operating plan included the need to develop a tobacco based electronic vapor product.²³⁴ RJRTC pursued a two-pronged approach to completing this plan that included either internally developing their own product or acquiring the technology from a third party.²³⁵ At that time, RJRTC was collecting third-party competitive products and analyzing them in their research and development facilities.²³⁶ In May 2010, a RJRTC leadership team prepared a presentation entitled “Tobacco Vapor Exploratory” that included a “Big Idea” related to heat-not-burn technology.²³⁷
89. In June of 2010, Fuma contacted RJRTC to explore the idea of a partnership between the two companies.²³⁸ Mr. Denny Potter (“Mr. Potter”), Vice President of Strategic Innovations at RJRTC, spoke with Mr. Conley about Fuma’s new e-cigarette device.²³⁹ Mr. Potter informed Mr. Conley that part of his job was to search for and investigate promising new technologies and product opportunities.²⁴⁰ Mr. Potter requested samples of Fuma’s new e-cigarette device and any additional information that Mr. Conley could provide.²⁴¹
90. Fuma then sent RJRTC additional information regarding their products as well as samples of the product including 2 Fuma batteries, 3 flavor cartridges, a USB and a wall charger.²⁴² Mr. Potter indicated that Fuma had a “unique design and operation” relative to the other vapor products he had analyzed.²⁴³ He also indicated that Fuma had a different taste, flavor, and operating ritual.²⁴⁴ He indicated that it was “significant” that Fuma’s product lacked a sweet aftertaste commonly associated with e-cigarettes and that he would ask RJRTC’s research and development team to analyze the product.²⁴⁵ Mr. Potter further indicated that the Fuma device had a “nice balanced feel” and it’s “magic” was its mouth piece / aerosolizer.²⁴⁶ Mr. Potter also noted that RJRTC’s evaluators reported that Fuma’s product offered a “far closer” “cigarette experience” than other e-cigarette designs.²⁴⁷ He stated that the Fuma product was “simple, clean, and very close to intuitive” and noted that he saw “more potential in this product design than any of the others.”²⁴⁸

²³³ IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 8

²³⁴ RJRV-F000695725 - RJRV-F000695726.

²³⁵ RJRV-F000695725 - RJRV-F000695726.

²³⁶ RJRV-F000695725 - RJRV-F000695726.

²³⁷ RJRV-F000220473 - RJRV-F000220492.

²³⁸ RJRV-F000684461 - RJRV-F000684463.

²³⁹ RJRV-F000684461 - RJRV-F000684463.

²⁴⁰ RJRV-F000686971 - RJRV-F000686972 at 72.

²⁴¹ RJRV-F000686971 - RJRV-F000686972 at 72.

²⁴² RJRV-F000684464.

²⁴³ RJRV-F000684464.

²⁴⁴ RJRV-F000684464.

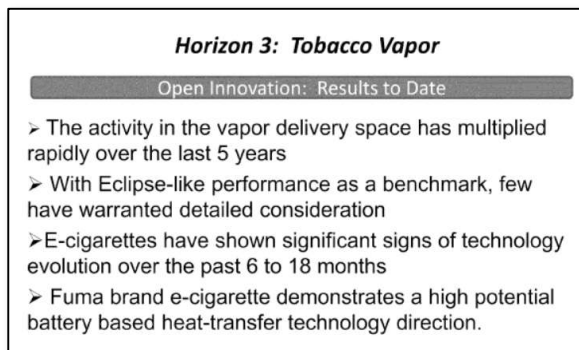
²⁴⁵ RJRV-F000684464.

²⁴⁶ RJRV-F000684464.

²⁴⁷ RJRV-F000684464.

²⁴⁸ RJRV-F000684464.

98. RJRTC restated this sentiment in another October presentation which noted that Fuma's e-cigarettes demonstrated "high potential".²⁶⁶



99. RJRTC began working with third-party engineering companies, including Boston Engineering Corp ("Boston Engineering"), Forthright Engineering PLC ("Forthright"), and FlexEL (collectively "Third Party Engineers") to develop a vapor and aerosol product.²⁶⁷ More specifically, RJRTC requested that these Third Party Engineers "propose concepts for innovative...methods to aerosolize a tobacco-based nicotine media (liquid or solid) with the intent of creating a smokeless "cigarette." ²⁶⁸ The purpose was to find an alternative and more advanced vaporization method that is superior to the existing smoking tobacco product in producing the desired adult consumer satisfaction comparable to traditional cigarettes.²⁶⁹
100. RJRTC reviewed a number of concepts from Boston Engineering, Forthright and FlexEL²⁷⁰ In light of these potential designs, RJRTC contemplated various options of how to enter the market. As of February 2011, RJRTC was working to have a product on the market before April 2013.²⁷¹ They noted that the current e-cigarette technology they were developing was a "valid path forward" for their own product development.²⁷² In a March 2011 presentation entitled "What's Hot in the Innovation Space" RJRTC included an image of a Fuma's e-cigarettes.²⁷³ During this period, RJRTC appears to have considered a number of alternative product concepts as they considered a number of different designs, including heat-not-burn, vapor designs, and hybrid designs.²⁷⁴
101. [REDACTED]

²⁶⁶ RJRV-F000213147 - RJRV-F000213166 at 162.

²⁶⁷ RJRV-F000196078 - RJRV-F000196090 at 089.

²⁶⁸ RJRV-F000168650 - RJRV-F000168667 at 650.

²⁶⁹ RJRV-F000168650 - RJRV-F000168667 at 650.

²⁷⁰ RJRV-F000619911 - RJRV-F000619928; RJRV-F000196450 - RJRV-F000196458; RJRV-F000167694 - RJRV-F000167724 at 702-713.

²⁷¹ RJRV-F000046963 - RJRV-F000046977 at 964.

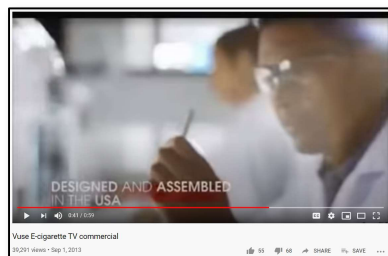
²⁷² RJRV-F000046963 - RJRV-F000046977 at 964.

²⁷³ RJRV-F000195869 - RJRV-F000195898 at 885.

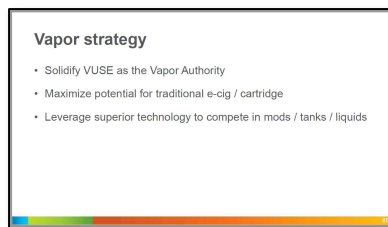
²⁷⁴ RJRV-F000638624 - RJRV-F000638642.

[REDACTED]

102. In April 2012, RAI created RJRV as an e-cigarette company. RJRV began offering product under the Vuse brand in limited distribution in 2012 and launched the Vuse Solo throughout the state of Colorado in 2013.²⁸⁰ The company launched the Vuse Solo nationally in 2014.²⁸¹
103. RJRV advertised Vuse Solo on television.²⁸² The 2013 advertisements are available on YouTube and presented below are screen shots of those advertisements.²⁸³



104. The purpose of these advertisements was to build the Vuse brand name as the “Vapor Authority” which would allow RJRV to “maximize” the potential for their existing e-cigarette products and leverage that brand to sell other forms of vaping technology including mods, tanks, and vapors.²⁸⁴ According to a 2014 New York Times article, Vuse was planning a national marketing campaign including television advertisement in major markets.²⁸⁵



[REDACTED]

²⁸⁰ https://journalnow.com/business/business_news/local/article_bb7b7a84-ceb2-11e2-b775-0019bb30f31a.html

²⁸¹ <https://www.cspdailynews.com/tobacco/rj-reynolds-vapor-begin-national-distribution-vuse>

²⁸² Reynolds American, Inc., Company Conference Presentation, February 17, 2015, page 7;

²⁸³ https://www.youtube.com/watch?v=zzEK7TL-W_o; <https://www.youtube.com/watch?v=JSiU3MbhlDw>

²⁸⁴ Reynolds American Inc., Investor Day Presentation, November 2015, pages 85 and 86

²⁸⁵ <https://www.nytimes.com/2014/06/17/business/a-bolder-effort-by-big-tobacco-on-e-cigarettes.html>

105. As recognized in the Cigarette and Tobacco industry, an important success factor is a strong brand name.²⁸⁶ It is my understanding that due to the MSA and other legal regulations, RJRTC was at the time not allowed to engage in certain types advertising and promotional activities for its traditional tobacco products including television advertisements.²⁸⁷ In contrast, RJRV's e-cigarette advertising events included print, TV and direct mail marketing.²⁸⁸ Also included in RJRV's promotional plans was the use of consumer couponing, as illustrated below.²⁸⁹



106. In 2013, when Vuse launched in Colorado, it took a market leadership position.²⁹⁰ RJRV reported that it had a “positive consumer response” to the quality of their product.²⁹¹ RJRV also noted that the company’s marketing did not begin until September which meant the company achieved a market leadership position in the state of Colorado prior to its marketing campaign.²⁹² Summarized below are the market share growth results for Colorado as presented by RJRV.²⁹³

²⁸⁶ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, page 19.

²⁸⁷ <https://www.durbin.senate.gov/imo/media/doc/Report%20-%20E-Cigarettes%20with%20Cover.pdf>; <https://www.fda.gov/media/108259/download>

²⁸⁸ <https://adage.com/article/media/big-tobacco-spending-ads-e-cigarettes/241993>

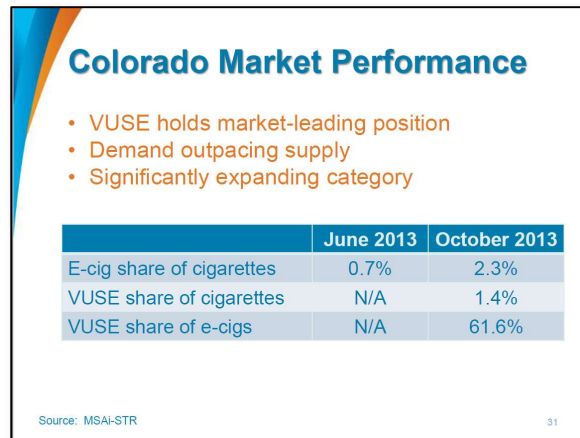
²⁸⁹ <https://www.worthpoint.com/worthopedia/coupons-free-vuse-solo-cartridges-1622216293>

²⁹⁰ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9.

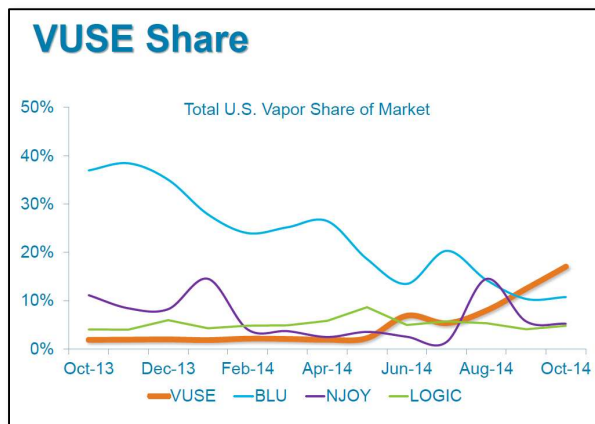
²⁹¹ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9.

²⁹² Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9.

²⁹³ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 31.



107. By November 2014, Vuse was distributed in about 70,000 outlets in the U.S.²⁹⁴ RJRV told investors that the performance of Vuse was “astounding”.²⁹⁵ Vuse's success is based in part on the fact that consumers were switching from traditional tobacco products to vapor products.²⁹⁶ According to RJRV, nearly 90% of Vuse's sales in the lead markets are replacement cartridges which meant smokers were switching and its razor/razorblade model is working.²⁹⁷ This was also supported by their promotional programs which generated a trial and resulted in a subset of consumers switching from traditional tobacco products.²⁹⁸ RJRV presented monthly data showing that Vuse’s share of the vapor market had increased from 0% (at product launch) to nearly 20% by October 2014.



108. On August 8, 2016, the FDA’s Deeming Rule²⁹⁹ went into effect, which extended the FDA’s tobacco product authority to previously unregulated categories such as Electronic

²⁹⁴ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 23

²⁹⁵ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 23

²⁹⁶ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 23

²⁹⁷ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 23

²⁹⁸ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 23

²⁹⁹ FDA published a final rule entitled “Deeming Tobacco Products To Be Subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act; Restrictions on the Sale and Distribution of Tobacco Products and Required Warning Statements for Tobacco Products” (“the Deeming Rule”).

Nicotine Delivery Systems (ENDS, including e-liquids and vapor devices), cigars, hookah and pipe tobacco.³⁰⁰ These deemed tobacco products and their components and parts were subject to the Tobacco Control Act and included any new products first marketed or modified after February 15, 2007.³⁰¹

109. Rather than force all new deemed tobacco products off the market when it went into effect, the Deeming Rule created a “compliance policy” that allowed deemed tobacco products that had entered the market by August 8, 2016 to remain on the market, so long as the manufacturer completed premarket applications (PMTAs) by an established compliance date.³⁰² New products that entered the market after August 8, 2016 could not take advantage of the compliance policy, and were required to submit PMTA’s and obtain FDA authorization before entering the US market.³⁰³ [REDACTED]
110. RJRV was “fully prepared for regulation” because RJRV had anticipated a regulated environment for vapor product, and the Solo had been designed with regulation in mind.³⁰⁵ It appears that these regulations were responsible, in part for RJRV’s decision not to launch the two new products that were to be named the Vuse Port and Vuse Pro since those products, while planned, were not on the market prior to August 8, 2016.³⁰⁶ Because Vibe was available in limited supply before the expanded FDA regulations when into effect, the Vibe was allowed to remain on the market under the compliance policy.³⁰⁷
111. By January 2017, the Vuse brand enjoyed the highest vapor product market share, with approximately a 30% share of the market in traditional channels.³⁰⁸ On January 3, 2017, the USPTO granted Fuma the ‘604 Patent.³⁰⁹ On March 6, 2019, Fuma filed a complaint against RJRV, accusing them of infringing the ‘604 Patent.³¹⁰ On July 2, 2019, the USPTO granted the ‘881 Patent.³¹¹ On the same day, Fuma filed a complaint against RJRV accusing RJRV of infringing the ‘881 Patent.³¹²

XI. CLAIMS FOR MONETARY DAMAGES

112. I understand that under 35 U.S.C. § 284, a plaintiff in a patent infringement matter may be entitled to “damages adequate to compensate for the infringement, but in no event less

³⁰⁰ <https://www.fda.gov/media/97664/download>

³⁰¹ <https://www.fda.gov/media/97664/download>

³⁰² <https://www.thecontinuumofrisk.com/2019/03/fdas-evolving-compliance-policy-for-deemed-tobacco-products-what-it-means-for-your-business/>

³⁰³ <https://www.thecontinuumofrisk.com/2019/03/fdas-evolving-compliance-policy-for-deemed-tobacco-products-what-it-means-for-your-business/>

³⁰⁵ Reynolds American Inc. Company Conference Presentation | Sep 07, 2016 p. 8.

³⁰⁶ Reynolds American Inc., Company Conference Presentation, Wednesday September 7, 2016, page 9.

³⁰⁷ https://journalnow.com/business/reynolds-vuse-tank-style-goes-nationwide/article_301f4e2f-ff7e-5cfc-9eae-c39860a315a0.html

³⁰⁸ British American Tobacco P.L.C. M&A Call | Jan 17, 2017, p. 8.

³⁰⁹ US Patent No. 9,532,604.

³¹⁰ Complaint for Patent Infringement dated March 6, 2019 (1:19-cv-00260).

³¹¹ US Patent No. 10,334,881.

³¹² Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

123. I have performed an analysis of the industry, the parties, and the relevant products to assess how the parties to this litigation would structure the hypothetical royalty. I considered the relevant facts of the case including the circumstances of the industry and the parties at the time of the hypothetical negotiation on January 3, 2017, as well as other economic considerations including the structure of the agreements produced as part of this litigation, as summarized below.

1. INDUSTRY CONSIDERATIONS

124. As already discussed, industry research indicates that smoking rates have declined as consumers become aware of the adverse health effects of smoking, because of the increasing amount of regulation in the industry and because of rising excise taxes. As consumption of tobacco cigarette declines, manufacturers search for other sources of revenue, such as e-cigarettes, which are subject to less regulation and a lower tax burdens relative to tobacco cigarettes.³²²
125. The continual adoption of e-cigarettes, a growing alternative to tobacco cigarettes, was expected to help curb falling smoking rates.³²³ As the leading tobacco product manufacturers introduced their own e-cigarette brands, product adoption of e-cigarettes was expected to accelerate.³²⁴ According to industry analysts, the popularity of e-cigarettes was growing in 2017.³²⁵ According to market research company Euromonitor International, global retail sales of e-cigarette and other e-vapor products were expected to exceed \$8.0 billion in 2016³²⁶ and \$16 billion by 2019.³²⁷ [REDACTED]
126. In the years leading up to the hypothetical negotiation a number of established tobacco manufacturers began acquiring smaller e-cigarette companies and introducing their own brands.³²⁹ For example, Lorillard acquired Blu in 2012 and then Skycig in 2013.³³⁰ In 2013, Philip Morris launched the Mark Ten.³³¹ Then in June 2018, Philip Morris invested \$12.8 billion to purchase a 35% stake in Juul.³³² This industry-wide activity indicates that large tobacco companies were moving into the e-cigarette market.
127. Approximately one year before the hypothetical negotiations, the FDA introduced the Deeming Rule preventing the introduction of new e-cigarette products without FDA approval.³³³ [REDACTED]

³²² IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 5

³²³ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, p. 7.

³²⁴ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, p. 7.

³²⁵ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing p. 13.

³²⁶ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing p. 13.

³²⁷ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing p. 12.

³²⁸ RJRV-F000071648, RJRV-F000601552 - RJRV-F000601570 at 601561.

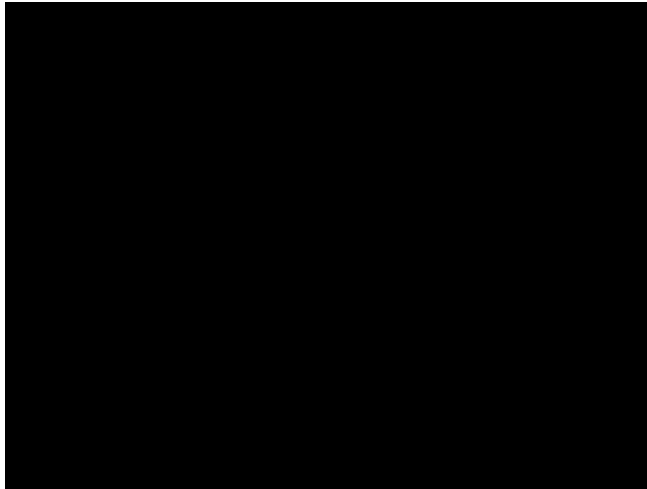
³²⁹ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, p. 7.

³³⁰ <https://finance.yahoo.com/news/lorillard-acquires-uk-e-cigarette-173003084.html>

³³¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5789794/>

³³² <https://www.businesswire.com/news/home/20140401006617/en/Altria-Completes-Acquisition-Green-Smoke;>
<https://www.npr.org/2018/12/20/678915071/altria-buys-35-percent-stake-in-e-cigarette-maker-juul>

³³³ <https://www.fda.gov/news-events/fda-voices/how-fda-regulating-e-cigarettes>



131. [REDACTED]

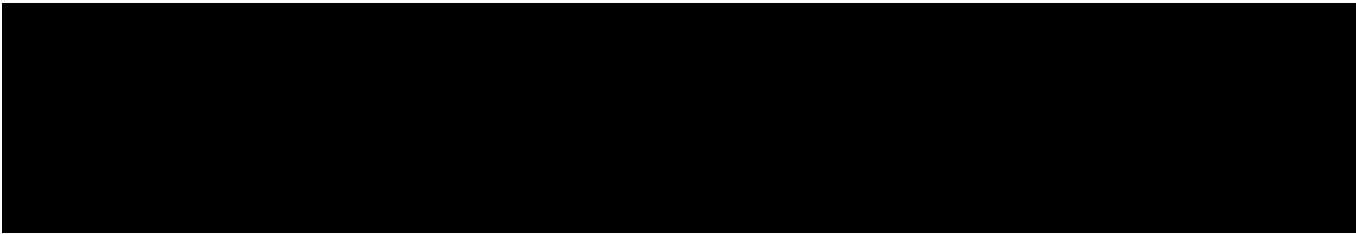
132. The above party-specific facts indicate that the parties would have considered structuring the hypothetical royalty as a lump sum payment or as a running royalty. This is a reasonable conclusion where Fuma requested an upfront investment and where RJRV considered buying or licensing Fuma's technology. In addition, RJRV's projected success in the market using the Patents-in-Suit is a motivating factor to structure the royalty as lump sum—because it would mean that RJRV could pay a one-time royalty equal to the present value of the future royalties it would expect to pay for its ongoing use of the Patents-in-Suit. In this way the one-time royalty payment could be lower than the total annual royalties paid through patent expiration in an ongoing basis. In addition, a lump sum royalty would mean that RJRV could avoid the administrative burden of periodic royalty audits to confirm compliance with the terms of the license agreement.

3. TRANSACTION HISTORY

133. [REDACTED]

³⁴⁰ [REDACTED]

³⁴¹ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, page 9.



4. RJRV’S INTERNAL GUIDANCE

134. [REDACTED]

5. CONCLUSION

135. As noted above, I analyzed certain economic issues that the parties would have considered at the January 3, 2017 hypothetical negotiation in an effort to assess the royalty structure for the hypothetical license. Summarized below are my conclusions based on the consideration of the industries, the parties, RJRV’s internal licensing guidance and RJRV’s transaction history.

| Perspective | | Consideration | |
|-------------------------|--|-----------------------------|--|
| Industry Considerations | | Lump Sum | |
| Party Considerations | | Lump Sum or Running Royalty | |
| [REDACTED] | | [REDACTED] | |
| [REDACTED] | | [REDACTED] | |

136. In light of these facts, it is my opinion that the parties would have structured the hypothetical royalty as a lump sum or as a running royalty. As such, I have alternatively expressed the damages in this matter as either a running royalty or as a lump sum.

E. ROYALTY BASE CALCULATION

1. COMPENSATION PERIOD

137. I have been asked to assume that the fact finder will determine that damages in this Matter begin on July 1, 2017. [REDACTED]
[REDACTED] Therefore, I have assumed that damages will extend at least through March 31, 2021, the presumed date of trial. As such, my royalty base for the running royalty structure extends from July 1, 2017 to March 31, 2021. In order to assess

[REDACTED]

the reasonable royalty damages structured as a lump sum for both Patents-in-Suit, I have calculated the present value of RJRV's Accused Revenues from July 1, 2017 to July 27, 2030, the expected date of patent expiration, as of January 3, 2017.

2. ASSESSMENT OF CUSTOMER DEMAND

138. I assessed the degree to which the Patents-in-Suit drive demand for the Accused Products by assessing the benefits associated with the patented invention, the alignment of those benefits with RJRV's stated design goals, and RJRV's own statements regarding components of the e-cigarettes, as detailed below.

a) DEMAND DRIVERS

139. Mr. Delen, the former consultant to RJRTC, told investors during a company presentation that an e-cigarette attribute needed to make it attractive to smokers was for it to be as close "as possible to the classic smoking experience."³⁴⁸ He also noted that that existing e-cigarettes left something to be desired which was preventing repeat use by customers.³⁴⁹ The desire of mimicking the "classic smoking experience" is consistent with the information found in RJRV's production.
140. For example, RJRTC notes in internal presentations that consumers demand a product that is: satisfying, intuitive, simple, familiar, offers a pleasant taste, and provides an experience that's similar to traditional cigarettes, as illustrated below.³⁵⁰



b) BENEFITS OF THE PATENTS-IN-SUIT

141. Prior to the Patents-In-Suit, it is my understanding that conventional e-cigarettes suffered from poor e-juice atomization.³⁵¹ According to Dr. Vallee, the poor e-juice atomization was a barrier to adoption.³⁵² It is my understanding that the Patents-in-Suit relate to a complete and operative e-cigarette and/or e-cigarette cartridge whose claim elements define all the necessary features to vaporize/atomize an e-liquid in a way that is superior

³⁴⁸ Reynolds American Inc. Company Conference Presentation | May 22, 2012 p. 9-10.

³⁴⁹ Reynolds American Inc. Company Conference Presentation | May 22, 2012 p. 9-10.

³⁵⁰ RJRV-F000158250 to RJRV-F000158276 at 256.

³⁵¹ Discussion with Dr. Vallee.

³⁵² Discussion with Dr. Vallee.

to existing e-cigarette designs.³⁵³ According to Dr. Vallee, the ‘604 and ‘881 patented technology is responsible for the better user experience compared to other e-cigarette products that pre-dated the Fuma invention.³⁵⁴

142. Mr. Conley testified in his deposition that he recognized that the e-cigarettes suffered from poor e-juice atomization and wanted to address the problem.³⁵⁵ Mr. Conley stated that the number one reason for poor e-juice atomization in previous e-cigarettes was that the liquid vaporization was not occurring within the airflow.³⁵⁶ Mr. Conley also testified that the foundational concept of the Fuma technology was that it contained the wicking material and the heating element in or around the central axial passage airflow.³⁵⁷ This resulted in vaporizing the solution within the airflow.³⁵⁸
143. The patented e-cigarette design operates in a manner that, by Mr. Potter’s and RJRV’s admission, was better and different than any of the existing e-cigarette products that RJRTC had analyzed and provided a better user experience that was more akin to traditional cigarette.³⁵⁹ For example, Mr. Potter connects Fuma’s patented heating coil design to customer demand by stating that Fuma’s aerosolizer and mouthpiece designs were its “magic” and by explaining how Fuma’s design provides benefits that are consistent the drivers of demand.³⁶⁰
- Satisfying with Pleasant Taste: “Significant, is the absence of the sweet aftertaste...”
 - Intuitive: “...very close to intuitive to use...”
 - Simple: “...the Fuma product is simple...”
 - Familiar: “...the experience is far closer to a cigarette experience...”
144. RJRTC’s internal presentation that reference Fuma’s design echo these points. For example, RJRTC stated that Fuma’s patented technology was the “best way forward”³⁶¹ that offered the “highest potential” with a “unique heating element” and a “new central flow design.”³⁶² RJRTC also stated that it considered Fuma’s designs to “advance their aerosol platform” in a way that would allow them to “place a bet” in a “promising e-cig approach.”³⁶³ On the whole, RJRTC labeled Fuma’s patented technology as “Enabling,” as illustrated below:³⁶⁴

³⁵³ Discussion with Dr. Vallee.

³⁵⁴ Discussion with Dr. Vallee.

³⁵⁵ Deposition of Mr. Conley, December 4, 2019 p. 77-78.

³⁵⁶ Deposition of Mr. Conley, December 4, 2019 p. 45-46.

³⁵⁷ Deposition of Mr. Conley, December 4, 2019 p. 45-46.

³⁵⁸ Deposition of Mr. Conley, December 4, 2019 p. 45-46.

³⁵⁹ Discussion with Dr. Vallee.

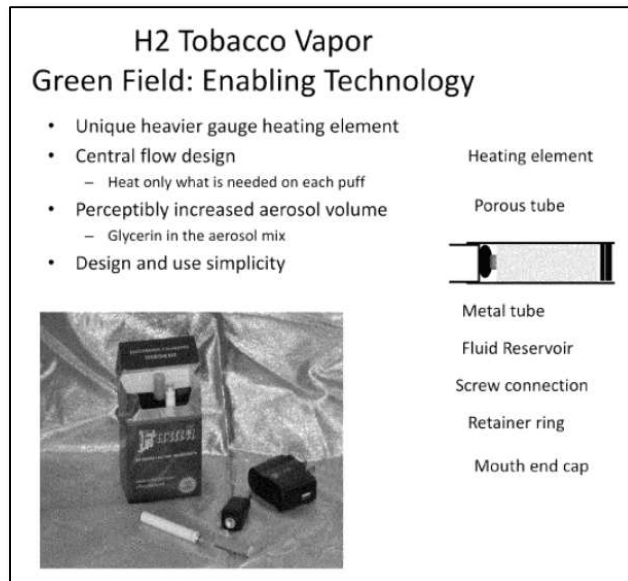
³⁶⁰ RJRV-F000684461 - RJRV-F000684463.

³⁶¹ RJRV-F000154458 - RJRV-F000154472 at 468.

³⁶² RJRV-F000154458 - RJRV-F000154472 at 469.

³⁶³ RJRV-F000154458 - RJRV-F000154472 at 470.

³⁶⁴ RJRV-F000678593 - RJRV-F000678605 at 602.



c) **SUMMARY**

145. Based on the above facts, which are summarized below, I conclude that it is reasonable to conclude that the patented invention is the basis of customer demand.

- The Patents-in-Suit relate to a design that better aerosolizes vapor and was considered “magic”³⁶⁵ and “enabling”.³⁶⁶
- This aerosolizing technology allows for a satisfying, intuitive, simple, familiar product that offers a pleasant taste.³⁶⁷
- Demand is driven by a product design that allows for a satisfying, intuitive, simple, familiar product that offers a pleasant taste.³⁶⁸

146. Furthermore, it appears that certain of the non-patented elements included within the Vuse products are not driving demand and are included within other e-cigarettes. Mr. Delen stated in a presentation to investors that prior to the introduction of Vuse, existing designs offered an inconsistent smoking experience.³⁶⁹ RJRV’s presentations provide an overview of existing technology:

- During a product review, RJRV noted that existing 3-piece designs included a control circuit-to control the power source, indicator lights, and the atomizing device, as illustrated below:³⁷⁰

³⁶⁵ RJRV-F000684464.

³⁶⁶ RJRV-F000678593 to RJRV-F000678605 at 602.

³⁶⁷ RJRV-F000684461 - RJRV-F000684463.

³⁶⁸ RJRV-F000684461 - RJRV-F000684463.

³⁶⁹ Reynolds American Inc., Analyst and Investor Day, November 12, 2012 p. 11.

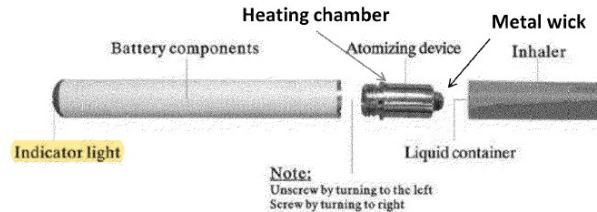
³⁷⁰ RJRV-F000154458 - RJRV-F000154472 at 462.

E-Cigarette standard 3 piece design

- Generally the control circuits cut the power after about 2 sec. to protect the fine wires of the heating coil and metal wick
- Users complain of messiness, fluid leakage and frequent cleaning of the coil
- Most follow a reverse flow design e.g. liquid must move counter to air flow
- Our current belief is that most of the aerosol deposits in mouth, throat and upper airway
- Current theory for why PG: lower boiling point, wet ability and flow ability vs.
- Glycerin's highly viscous nature

1. Structure of the Super Cigarette body

The Mini Electronic Cigarette body is composed of atomizing device, microcomputer controlled circuit and lithium battery components. An operating mode indicator light at tip of the battery components.



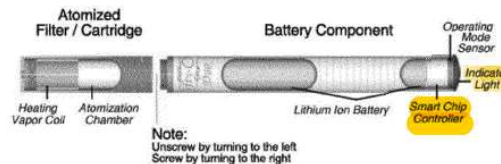
- In addition, RJRTC notes that existing two-piece designs use a microcomputer-controlled circuit to control the operations of a power source, heating coil and an indicator light, as illustrated below.³⁷¹

Two piece e-cig

- The newest models attempt to resolve issues by combining the 'atomizer' and reservoir
- Less mess, simpler, less tampering, preserve the "razor blade model"
 - Smoke 51 appears unique in it's down stream flow design

Smoke 51

Structure: The Fifty-One Duo™ Electronic Cigarette is comprised of an atomizing device, a microcomputer controlled circuit, and a rechargeable lithium battery. An operating mode indicator light can be found at the tip of the battery.



147. These documents indicate that others, besides RJRV, were using microprocessors, indicator lights, and a power source.³⁷² Instead, the point of differentiation, by Mr. Potter's and RJRV's own admission, was the technology patented by Fuma which was better and different ("magic" and "enabling") than any of the existing e-cigarette products

³⁷¹ RJRV-F000154458 - RJRV-F000154472 at 464.

³⁷² Reynolds American Inc. Analyst/Investor Day, Nov 12, 2012 Page 11; RJRV-F000154458 - RJRV-F000154472 at 464.

that RJRTC had analyzed and provided a better user experience that was more like a traditional cigarette.³⁷³

3. CALCULATION

148. I have analyzed RJRV's financial production to calculate my royalty base which included sales and volume reports for the Vuse brand generated from RJRV's accounting system, SAP ("SAP Sales Reports")³⁷⁴ and RJRV's profit and loss statements ("RJRV P&Ls"). According to deposition testimony by Mr. Nicolas Gilley, Vice President of Marketing Performance at RJRTC, the RJRV P&Ls represent RJRV's internal reporting and official documentation.³⁷⁵ Mr. Gilley also testified that he would expect any differences between the SAP Sales Reports and the RJRV P&Ls to be "small" and caused by the consolidation process, which could include corrections and adjustments that are both system generated and manually entered.³⁷⁶
149. Based on my review of the SAP Sales Reports and RJRV P&Ls, I understand that RJRV tracks revenue at different levels. First it tracks revenue generated based on list price ("List Price") which it refers to as gross value in the SAP Sales Reports ("List Revenue"). From List Revenue, RJRV subtracts negotiated term discounts and other discounts, which can include one-time special allowances associated with product introductions, and any returns resulting in net revenue ("Net Revenue").
150. I compared the Net Revenues reported in the SAP Sales Report to the Net Revenues to the RJRV P&Ls from 2013 through 2019. When I note differences between the SAP Sales Report and the RJRV P&L I reconcile the SAP Sales Report to the P&L amounts. RJRV did not produce a P&L for 2020. As such I was unable to reconcile the 2020 SAP Sales Report data and I know from my analysis of the other years and Mr. Gilley's deposition testimony that there are differences based on the consolidation process. Therefore, instead of relying upon unreconcilable SAP Sales Report figures for the first quarter of 2020 and then annualizing those figures to account for the remainder of 2020, I have estimated all of RJRV's actual 2020 revenues. If and when RJRV updates its financial production, I reserve the right to update my 2020 figures using the same reconciliation process I used for the 2013 to 2019 revenues.
151. As detailed in Exhibit 10, RJRV earned approximately [REDACTED] in Net Revenues from the sale of the Accused Products from 2013 through 2019. RJRV earned these Net Revenues from the sale of the three different packages including the Solo and Ciro Kits,

³⁷³ Discussion with Dr. Vallee.

³⁷⁴ Through at least December 2018, the SAP Sales Reports represented sales made to wholesalers. Based on the 2018 deposition testimony of Nick Gilley, in January of 2018 RJRV began selling Vuse products directly to the consumer through its online store. It is my understanding based on Mr. Gilley's deposition testimony that the SAP system was configured to track online sales in 2018. (Deposition Mr. Gilley dated July 10, 2018, p. 66:12-68:5.) Additionally, the results of my reconciliation between 2018 SAP Sales Reports and 2018 RJRV P&Ls, indicate that the 2018 online sales are either captured in the SAP Sales Reports or are relatively small. My SAP Sales Reports reconciliation to the RJRV P&Ls for 2019 reflects larger differences and I rely on the 2019 RJRV P&Ls where needed as it was represented as being RJRV's official documentation.

³⁷⁵ Deposition of Mr. Gilley dated July 10, 2018, p. 156:8-10.

³⁷⁶ Deposition of Mr. Gilley dated July 10, 2018, p. 155:17-22.

the Solo and Ciro Power Units, and the Solo and Ciro Cartridge Packs. A review of RJRV's P&Ls from 2013 to 2019 indicate the following product mix:³⁷⁷

- [REDACTED]
- [REDACTED]
- [REDACTED]

152. The following sections summarize my calculations as to the royalty base for the reasonable royalty structured as a running royalty as well as the present value of RJRV's Accused Revenues from July 1, 2017 to July 27, 2030, the expected date of patent expiration, as of January 3, 2017.

a) **FOR THE RUNNING ROYALTY STRUCTURE**

i. **Historic Accused Revenues**

153. As noted above, I have assumed that the Damages Period for this Matter begins on July 1, 2017 and extends to March 31, 2021.

154. As detailed in Exhibit 4.a and 4.b, I estimate RJRV's total Net Revenue earned from the sale of Accused Products from July 1, 2017 through December 31, 2019 as [REDACTED]

ii. **Reconciling RJRV's Forecasts**

155. I analyzed and compared three sales forecasts made by RJRV in 2014, 2016, and 2017 ("the RJRV Projections"), as detailed below:

- **The 2014 Projections:** [REDACTED]

³⁷⁷ See Exhibit 6.a or 6.b.

³⁷⁸ RJRV-F000071469

[REDACTED]

- **The 2016 Projections:** RJRV also prepared sales projections in 2016.³⁸⁵ These projections indicate that the company was expecting its revenue from Solo Cartridges Pack [REDACTED] from 2016 to 2025, [REDACTED]. Further, these projections indicate that the company was expecting its unit sales of Solo cartridges [REDACTED] from 2016 to 2025, [REDACTED].
- **The 2017 Projections:** RJRV also prepared sales forecasts in 2017.³⁹⁰ These projections were prepared by RJRV in March 2017 and show that the company was expecting its revenue from Vuse products [REDACTED] from 2017 to 2019, [REDACTED]. Further, these projections show that the company was expecting its unit sales of Vuse products [REDACTED] from 2017 to 2019, a [REDACTED].

iii. Forecasting RJRV's Accused Net Revenue

156. I have performed a scenario analysis to forecast the Net Revenue of the Accused Products in 2020 and 2021. In the first scenario, I have assumed that the Net Revenue of the Accused Products will increase by 3% per year. A 3% growth rate is reasonable because that is equal to the risk-free rate in 2019.³⁹⁵ In the second scenario, [REDACTED]. As detailed in Exhibit 4.a, my first scenario forecasts the Net Revenues of the Accused Products from January 1, 2020 through March 31, 2021 to be [REDACTED]. As detailed in Exhibit 4.b, my second scenario forecasts the Net Revenues of the Accused Products from January 1, 2020 through March 31, 2021 to be [REDACTED].
157. I further calculate a total royalty base for these two scenarios as follows:
- Scenario 1: I calculate the royalty base of [REDACTED] by adding (1) the July 1, 2017 to December 31, 2019 Accused Product Net Revenue [REDACTED] to (2) the January 1, 2020 to March 31, 2021 projected Net Revenues from scenario one of [REDACTED] ("Running Royalty Base").³⁹⁶ I reserve the right to update

³⁸⁵ RJRV-F000601552 to 601570 at 601561

³⁹⁰ RJRV-F000071648

³⁹⁵ <https://www.duffandphelps.com/insights/publications/valuation/us-normalized-risk-free-effective-september-30-2019#:~:text=However%2C%20based%20on%20declining%20real,until%20further%20guidance%20is%20issued.>

³⁹⁶ See Exhibit 4.a.

my Running Royalty Base if and when RJRV produces new information and data regarding its sales of the Accused Products in 2020 and 2021.

- [REDACTED]
[REDACTED]
[REDACTED] I reserve the right to update my Running Royalty Base if and when RJRV produces new information and data regarding its sales of the Accused Products in 2020 and 2021.

b) FOR THE LUMP SUM STRUCTURE

158. As noted, the lump sum royalty is calculated as the present value of the Net Revenue that RJRV will earn from the sale of Accused Products from July 1, 2017 through July 27, 2030 (“Lump Sum Royalty Base”), as of January 3, 2017. I performed a three-step process to estimate the Lump Sum Royalty Base.

- As calculated above, RJRV earned [REDACTED] in Net Revenue from the sale of Accused Product from July 1, 2017 through December 31, 2019. To the [REDACTED], I add RJRV’s Net Revenue from January 1, 2020 through July 27, 2030 based on the assumption that RJRV’s annual Net Revenues from January 1, 2020 to July 27, 2030 will have a 3% or 8% growth per year (“Lump Sum Net Revenues”).
- Second, I performed a build-up analysis to compute a discount rate that would be applied to the Lump Sum Net Revenues.
- Third, I discounted the Lump Sum Net Revenues to January 3, 2017 (the date of the hypothetical negotiation) with the computed discount rate.

i. Accused Net Revenues (Jul 1, 2017 to Dec 31, 2019)

159. As detailed in Exhibit 2.a and 2.b, and described above, I calculate that RJRV earned [REDACTED] from the sale of Accused Products from July 1, 2017 through December 31, 2019.³⁹⁸

ii. Projecting RJRV’s Accused Net Revenue

160. As noted above, I have performed a scenario analysis to forecast the Net Revenue of the Accused Products in 2020 through 2030. In the first scenario, I have assumed that the Net Revenue of the Accused Products will increase by 3% per year. A 3% growth rate is reasonable because that is equal to the risk-free rate in 2019.³⁹⁹ In the second scenario, I have assumed that the Net Revenue of the Accused Products will increase by [REDACTED], consistent with RJRV’s revenue forecasts.⁴⁰⁰ As detailed in Exhibit 2.a, my first scenario forecasts the Net Revenues of the Accused Products from January 1, 2020 through July 27, 2030 to be [REDACTED]. As detailed in Exhibit 2.b, my second scenario forecasts the

³⁹⁷ See Exhibit 4.b.

³⁹⁸ See Exhibit 2.a and 2.b.

³⁹⁹ <https://www.duffandphelps.com/insights/publications/valuation/us-normalized-risk-free-effective-september-30-2019#:~:text=However%2C%20based%20on%20declining%20real,until%20further%20guidance%20is%20issued.>

⁴⁰⁰ RJRV-F000601552 - RJRV-F000601570 at RJRV-F000601561, and RJRV-F000071648

Net Revenues of the Accused Products from January 1, 2020 through July 27, 2030 to be [REDACTED].

161. I further calculate a total royalty base for these two scenarios as follows:

- Scenario 1: I calculate the royalty base of [REDACTED] by adding (1) the July 1, 2017 to December 31, 2019 Accused Product Net Revenue of [REDACTED] to (2) the January 1, 2020 to July 27, 2030 projected Net Revenues from scenario one of [REDACTED] ("Running Royalty Base").⁴⁰¹ I reserve the right to update my Running Royalty Base if and when RJRV produces new information and data regarding its sales of the Accused Products.
- Scenario 2: I calculate the royalty base of [REDACTED] by adding (1) the July 1, 2017 to December 31, 2019 Accused Product Net Revenue of [REDACTED] to (2) the January 1, 2020 to July 27, 2030 projected Net Revenues from scenario two of [REDACTED] ("Running Royalty Base").⁴⁰² I reserve the right to update my Running Royalty Base if and when RJRV produces new information and data regarding its sales of the Accused Products.

iii. Selection of a Discount Rate

162. Time value of money theory states that money in present terms is worth more than money in the future due to foregone interest or opportunity and uncertainty in receiving the expected amount. Since the negotiation would be occurring on January 3, 2017, I have discounted all revenues for the reasonable royalty structured as a lump sum back to January 3, 2017 by using a discount rate. The discount rate is a rate of return used to convert a future monetary sum into a present value.⁴⁰³ The discount rate takes into account the time value of money along with the risk and uncertainty of the projections that a typical party would expect in the normal course of its business within the Tobacco and Cigarette industry.
163. The discount rate was determined using a Build-Up Method which is a well-recognized method of determining a discount rate. The figures used in the Build-Up Method are derived from Duff & Phelps' Cost of Capital Navigator.⁴⁰⁴ The method is called a "Build-up" method because it is the sum of risks associated with various classes of assets. It is based on the principle that an investor would require a greater return on classes of assets that are associated with more risk.
164. The first element of a build-up rate is the risk-free rate, which is the rate of return for long-term government bonds. The risk-free rate on January 3, 2017 was 2.78%.⁴⁰⁵
165. Investors who buy large-cap equity stocks, which are more risky than long-term government bonds, require a greater return, so the next element of the Build-Up method

⁴⁰¹ See Exhibit 2.a.

⁴⁰² See Exhibit 2.b.

⁴⁰³ SSVS, p. 43 from the International Glossary of Business Terms.

⁴⁰⁴ <https://dpcostofcapital.com/>; "An online platform that guides you through the process of estimating cost of capital, a key component of any valuation analysis."

⁴⁰⁵ See Exhibit 30.

is the equity risk premium. The long-term equity risk premium as of January 3, 2017 was 5.97%.⁴⁰⁶

166. Investors who invest in small cap stocks, which are riskier than blue-chip stocks, require a greater return, called the “size premium.” As of January 3, 2017, RAI’s market cap was \$80.1 billion.⁴⁰⁷ The size premium for publicly traded companies with a market capitalization between \$24.3 billion and \$609.2 billion as of January 3, 2017 was -0.35% (negative 0.35%).⁴⁰⁸
167. By adding the first three elements of a build-up discount rate, I determined the rate of return that investors would require on their investment in a large publicly traded company. These three elements of the build-up discount rate are known collectively as the “systematic risks”. This type of invested risk cannot be avoided through portfolio diversification. It arises from external factors and affects every type of investment in the economy.
168. In addition to systemic risks, a discount rate also includes “unsystematic risk” which represents the portion of total investment risk that can be avoided through diversification. One type of risk “unsystematic risk” is known as an “industry risk” which can be observed by studying the returns of a group of companies operating in the same industry sector. Aswath Damodaran⁴⁰⁹ provides beta values for various industries⁴¹⁰ and Duff & Phelps uses this industry beta to quantify the risks associated with various industries. The beta value for the Cigarette & Tobacco industry is 1.68.⁴¹¹ The industry risk associated with this beta value as of the January 3, 2017 was 4.06%.⁴¹²
169. I then added the risk-free rate, the equity risk premium, the size premium, and the industry risk premium together to arrive at a total rate of 12.46%.⁴¹³ I then used this rate to discount the Lump-Sum Net Revenues that RJRV would expect to earn from the sale of the Accused Products back to January 3, 2017.
170. I note that RJRV used a discount rate of [REDACTED] when performing a net present value analysis to support the Vuse business case.⁴¹⁴ Given that RJRV has previously used a discount rate of [REDACTED], I have also used [REDACTED] as part of my scenario analysis.
171. With respect to both the [REDACTED] and 12.46% discount rates, I note that these rates are reasonable and conservative because present valuation calculations are typically performed on a prospective basis. However, in this case, the Lump Sum Net Revenue are not only forward looking. Instead the Lump Sum Net Revenue include actual and forecasted amounts. In other words, we presently know with certainty RJRV’s actual Net

⁴⁰⁶ See Exhibit 30.

⁴⁰⁷ <https://www.macrotrends.net/stocks/charts/RAI/market-cap>

⁴⁰⁸ See Exhibit 30.

⁴⁰⁹ Aswath Damodaran is a corporate finance and valuation professor at the Stern School of Business at NYU; <http://pages.stern.nyu.edu/~adamodar/>.

⁴¹⁰ http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html; “US Levered and Unlevered Betas by Industry”.

⁴¹¹ http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html

⁴¹² See Exhibit 30.

⁴¹³ See Exhibit 30.

⁴¹⁴ RJRV-F000185644 to RJRV-F000185699 at 676

Revenues from July 3, 2017 through December 31, 2019. Since the selected discount rates are used for the purpose of adjusting for the risk associated with forward-looking forecasts it is my opinion that their application to RJRV's actual Net Revenues is conservative.

iv. Discounting to January 3, 2017

172. I discounted the Lump Sum Net Revenues back to January 3, 2017 because that is the date of the hypothetical negotiation.
- Scenario 1: Under the first scenario, which assumes a 3% growth rate per year and a 12.46% discount rate, the present value of RJRV's Accused Product Net Revenue is approximately [REDACTED] as of January 3, 2017.⁴¹⁵
 - Scenario 2: Under the second scenario, which assumes an 8.0% growth rate per year and a 11% discount rate, the present value of RJRV's Accused Product Net Revenue is approximately [REDACTED] as of January 3, 2017.⁴¹⁶
173. I reserve the right to update my calculations if I become aware of additional information and data from RJRV regarding its sales and its sales expectations for the Accused Products.

XIII. ROYALTY RATE ANALYSIS

174. The determination of a reasonable royalty, from an economic perspective, involves the valuation of intangible asset(s) and determining what a user would pay and a buyer would accept for the right to use the asset(s). I developed conceptual reference points based on the minimum a licensor would be willing to receive and the maximum a licensee would be willing to pay, as discussed in the American Institute of Public Accountants' consulting guide, "Valuing Intellectual Property and Calculating Infringement Damages."⁴¹⁷ I have considered the three standard quantitative valuation methods referred to as the Income, Market, and Cost Approaches in developing these reference points. My approach in utilizing each valuation method is discussed in detail below.

A. THE INCOME APPROACH

175. As described in Valuing Intangible Assets, the Income Approach values intangible assets based on expectations of economic income that may be generated by use or ownership of the subject property: "The Income Approach is based upon the economic principle of anticipation (sometimes also called the principle of expectation). As the name of the principle implies, the investor anticipates the expected economic income to be earned from the investment in the subject intangible asset."⁴¹⁸ In this approach, the value of the subject intangible asset is the present value of the expected economic income to be earned from the ownership of that intangible asset.

⁴¹⁵ See Exhibit 2.a.

⁴¹⁶ See Exhibit 2.b.

⁴¹⁷ Michael Mard and Joseph A. Agiato, Jr., *Valuing Intellectual Property & Calculating Infringement Damages*, AICPA Practice Aid 99-2 (1999).

⁴¹⁸ Reilly, Robert F. and Schweih, Robert P., *Valuing Intangible Assets*, 1999, p. 113.

176. As part of my Income Approach, I have performed an analysis of the profits that RJRV earned from the sale of Accused Products and an analysis of the profits that Fuma would have earned from the sale of the Embodying Products.

1. ANALYSIS OF RJRV'S PROFITS

177. My analysis included a review of the net profit, gross profits and net profits defined as follows:

- Standard Profit – RJRV's standard profit is calculated as List Revenue net of returns less the cost to manufacture the product ("Standard Profit"). The cost to manufacture the product ("COGS" or Manufacturing Costs) includes standard costs ("Standard Costs") and reported manufacturing variances ("Manufacturing Variances"). Standard Costs are set annually⁴¹⁹ and include (1) raw materials as set forth in a bill of materials ("BOM") and (2) the associated labor and overhead to convert the raw materials to finished products.
- Gross Profit – RJRV's gross profit is calculated as Net Revenues less COGS. As such, in addition to any returns, it also accounts for any discounts, allowances, FET, and promotions RJRV provided its customers as part of its pricing strategy.
- Operating Profits – RJRV's operating profit is calculated as Net Revenues less COGS and RJRV's operating expenses, i.e., marketing, general and administration, research and development, and other operating expenses.

178. I have performed an analysis of RJRV's sales reports as compared to RJRV's profit and loss statements. I note that these sources both provide financial information, but they do not provide identical financial information. When reconciling these figures, I note a minor difference from 2013-2018.⁴²⁰ However, there are material differences between these two sources in 2019.⁴²¹ It is unclear why this significant difference exists. Therefore, I have not considered RJRV's 2019 profit margins in my Income Approach.

179. I first analyzed RJRV's 2013 to 2018 Operating Profits earned from the sale of Accused Product. This analysis indicated that from 2013 to 2018, [REDACTED]

180. [REDACTED]
[REDACTED]
[REDACTED] As discussed throughout this report RJRV uses price to gain market share

⁴¹⁹ Deposition of Mr. Gilley dated July 10, 2018, p. 197:15-199:5.

⁴²⁰ See Exhibit 14.

⁴²¹ See Exhibit 14.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

in the e-cigarette sector. In fact, RAI disclosed to investors that it uses price as a strategy to build and protect its brand image, loyalty and build market share, as noted below:⁴²⁵

- RJR Tobacco’s marketing programs are “designed to strengthen brand image, build brand awareness and loyalty, and switch adult smokers of competing brands to RJR Tobacco brands.”
- “In addition to building strong brand equity, “RJR Tobacco’s marketing approach utilizes a retail pricing strategy, including discounting at retail, to defend certain brands’ shares of market against competitive pricing pressure.”
- “RJR Tobacco’s “competitive pricing methods may include list price changes, discounting programs, such as retail and wholesale buydowns, periodic price reductions, off-invoice price reductions, dollar-off promotions and consumer coupons.”
- “Retail buydowns refer to payments made to the retailer to reduce the price that consumers pay at retail. Consumer coupons generally are distributed by a variety of methods including in, or on, the pack and by direct mail.”
- “RJR Tobacco provides trade incentives through trade terms, wholesale partner programs and retail incentives. Trade discounts are provided to wholesalers based on compliance with certain terms.”
- “The wholesale partner programs provide incentives to RJR Tobacco’s direct buying customers based on performance levels. Retail incentives are paid to the retailer based on compliance with RJR Tobacco’s contract terms.”

181. [REDACTED]

182. [REDACTED]

[REDACTED]

[REDACTED]

183. I then analyzed the Gross Profits of each of the three categories of Accused Products, including the Accused Kit, the Accused Power Unit, and the Accused Cartridge. This analysis, which is summarized below, indicates that RJRV derived the majority of its Gross Profits from the sale of the Accused Cartridge.
- The Accused Kit: From 2013 to 2018, RJRV earned [REDACTED] in gross profits from the sale of Accused Kits.⁴³⁴
 - The Accused Power Unit: From 2013 to 2018, RJRV earned [REDACTED] in gross profits from the sale of the Accused Power Units.⁴³⁵
 - The Accused Cartridges: From 2013 to 2018, RJRV earned [REDACTED] in gross profits from the sale of the Accused Cartridges.⁴³⁶
184. As previously discussed, RJRV is running a razor blade business model, which is different than the business model for combustible cigarettes. In the case of combustible cigarettes, when a customer finishes a pack of cigarettes, the product is consumed. But with RJRV's Accused Products, the user still has the battery pack and the charging station, after the e-liquid in the cartridge has been consumed. In other words, there is a sunk cost that keeps RJRV's customers buying the Accused Products so that they get the most out of their investment and stay locked into the brand.
185. As such, I have analyzed the Gross Profits that RJRV expected to earn from the sale of the Accused Cartridges. From 2013-2018, [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED] Given this, RJRV's 2017 Gross Profits

[REDACTED]

⁴³⁴ See Exhibit 10.2.

⁴³⁵ See Exhibit 10.3.

⁴³⁶ See Exhibit 10.1.

[REDACTED]

from the sale of cartridges provides a second indication of the profits that RJRV expected to earn [REDACTED] after it achieved its other priorities (national expansion and market share).

186. In recognition of the fact that RJRV has contributed its own manufacturing processes, has taken on the business risks of selling Fuma's patented invention at a national scale and is managing the process of distributing the Accused Products through thousands of its retailer customers, I have apportioned the two profit indicators noted above [REDACTED] [REDACTED] using a bill of materials analysis ("BOM Analysis"). A BOM Analysis shares profits between licensing parties based on a comparison of the cost of the patented features relative to cost for the entire product.
187. I analyzed the BOM materials data produced by RJRV for both the Solo, which are made in the United States, and the Ciro which are made abroad and shipped to the United States. The Solo BOM provides a detailed breakdown of the components used to manufacture the Solo products while the Ciro BOM lists cost by category. Therefore, my BOM Analysis is based on the Solo BOMs.
- The Solo Cartridges BOM shows fifteen components including a case, a cartridge, a box, a label, the e-liquid, the end cap, the base, a terminal, a heater wick, a flow tube, a stainless tube, a printed circuit board, a substrate, a blister lidding, and some adhesive.⁴⁴⁰ As such, the total material cost of these elements in 2017 amounts to [REDACTED] cartridge.⁴⁴¹ Of these elements, it is my understanding that the Patents-in-Suit relate to the e-liquid, an end cap, a base, terminals, a heater element, a flow tube, the stainless-steel housing, and substrate.⁴⁴² The total cost of the elements that are related to the Patents-in-Suit in 2017 amounts to [REDACTED] per cartridge.⁴⁴³ I then compared the cost of the patented components [REDACTED] relative to the total cost of the components [REDACTED]. This comparison indicates that the cost of the patented components is equal to [REDACTED] of the total cost of the cartridge.⁴⁴⁴
 - The Solo kit BOM shows eighteen components including a case, a cartridge, a box, a label, the e-liquid, the end cap, the base, a terminal, a heater wick, a flow tube, an external tube, a printed circuit board, a substrate, a blister lidding and forming web, adhesive, Solo kit packaging, a power unit, and a charger.⁴⁴⁵ As such, the total cost of these elements in 2017 amounts to [REDACTED] per cartridge.⁴⁴⁶ Of these elements, it is my understanding that the Patents-in-Suit relate to the e-liquid, an end cap, a base, terminals, a heater element, a flow tube, the power unit, and the external tube.⁴⁴⁷ The total cost of the elements that are related to the Patents-in-Suit in 2017 amount to [REDACTED] per Solo kit.⁴⁴⁸ I then compared the cost

⁴⁴⁰ RJRV-F000050590 to RJRV-F000050592.

[REDACTED].

⁴⁴² Discussion with Dr. Vallee.

[REDACTED]
[REDACTED]

⁴⁴⁵ RJRV-F000050590 to RJRV-F000050592.

⁴⁴⁶ See Exhibit 21.

⁴⁴⁷ Discussion with Dr. Vallee.

⁴⁴⁸ See [REDACTED].

of the patented components [REDACTED] relative to the total cost of the components [REDACTED]. This comparison indicates that the cost of the patented components is equal to [REDACTED] of the total cost of the Solo kit.⁴⁴⁹

188. I then apportioned the Gross Profits RJRV earned from the sale of Accused Products [REDACTED] and from the Accused Cartridges [REDACTED] using the ratio of the patented components as compared to the non-patented components [REDACTED] to arrive at two royalty indicators, 14.0% and 16.6%, respectively.⁴⁵⁰ The Solo kit BOM analysis provides a higher allocation rate given the cost of the power source -- which means that by using the Solo Cartridge BOM analysis as the basis for allocating value, I have built in an apportionment of the value of the power source with this value being allocated to RJRV.

2. ANALYSIS OF FUMA'S PROFITS

189. In mid-2009, Fuma had no revenues and had never sold an electronic cigarette.⁴⁵¹ Over the next two years, Fuma's revenues increased to \$2.5 million.⁴⁵² In 2011, Fuma realized gross profits of 54.4% from the sale of Embodying Products and operating profits of 32.4%.⁴⁵³ At this time, Fuma was the only company in the market selling a product that incorporated the Patents-in-Suit.
190. Starting in 2013, a number of large tobacco manufacturers entered the market for e-cigarettes. For example, Lorillard acquired Blu in 2012 and then Skycig in 2013. Philip Morris launched the Mark Ten in 2013.⁴⁵⁴ Fuma's financial performance declined during these years, and after RJRV launched its Accused Products and achieved a leading market share position. In 2013, Fuma's Embodying revenue decreased to \$1.8 million.⁴⁵⁵ It fell again in 2014 (to approx. \$935,000) and again in 2015 (to approx. \$641,000).⁴⁵⁶ From 2015 through 2019 the company's annual Embodying revenue has generally held constant and averaged approximately \$722,000, per year.⁴⁵⁷ Fuma's gross profits from the sales of Embodying Products also decreased between 2011 and 2017. As illustrated in Exhibit 23, Fuma operated at a loss in 2013 and 2014 and then from 2015-2019 Fuma's operating profit margins from the sale of Embodying Products averaged approximately 20% of its net revenue.⁴⁵⁸
191. Fuma's 2011 operating profit margin from its Embodying Products is informative to the parties at the hypothetical negotiation because this is the amount of profit that Fuma earned prior to major tobacco companies entering the market. As noted throughout this report, of these companies RJRV had the largest market share.

⁴⁴⁹ [REDACTED]

⁴⁵⁰ See Exhibit 9.

⁴⁵¹ Exhibit B, C and D to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁴⁵² See Exhibit 24.

⁴⁵³ See Exhibit 23.

⁴⁵⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5789794/>.

⁴⁵⁵ See Exhibit 24.

⁴⁵⁶ See Exhibit 24.

⁴⁵⁷ See Exhibit 24.

⁴⁵⁸ See Exhibit 23.

192. I also note that in 2017, at the time of the hypothetical negotiation, Fuma earned operating profit margins of 16.1% from the sale of its Embodying Products.⁴⁵⁹ Fuma's 2017 operating profits are informative because that is the amount of profit that Fuma was earning from the sale of Embodying Products that incorporated the Patents-in-Suit at the date of the hypothetical negotiation. This data points provides an indicator for Fuma to consider when negotiating at the hypothetical negotiation because it represents its own expectation as to how much profit can be earned when the product is priced to cover all manufacturing, labor, and overhead expenses. It is also conservative to consider Fuma's 2017 operating profit margin from the sale of Embodying Products because the company's operating profits for the Embodying Product increased in 2018 and 2019.
193. In recognition of the fact that RJRV contributed its own manufacturing processes, has taken on the business risks of selling Fuma's patented invention at a national scale and is managing the process of distributing the Accused Products through thousands of its retailer customers, Fuma's 2017 operating profit margin of 16.1% is instructive as to the royalty rate where it represents the value of the Patents-in-Suit to Fuma at that time and it represents a 50% apportionment relative to the company's 2011 operating profit margin (32.4%) for Embodying Products.

B. THE MARKET APPROACH

194. The Market Approach values assets based on comparable transactions between unrelated parties. "The Market Approach to valuing intangible assets is the process by which a market value estimate is derived by analyzing similar intangible assets that have recently been sold or licensed, and then comparing those intangible assets to the subject intangible asset."⁴⁶⁰ When considering the Market Approach, an examination of the terms of transfer for similar technology is undertaken and inferences are drawn from those observations to identify terms the parties might have agreed to at the time of the hypothetical negotiation. I have analyzed agreements in the case record that were produced by Fuma and RJRV.

1. FUMA'S OFFER TO RJRV

195. In July 2009, Fuma sought to enter into a partnership agreement with RJRTC.⁴⁶¹ Fuma's proposal involved RJRTC investing \$41 million in Fuma to finance a manufacturing facility for the e-cigarettes covered by the Patents-in-Suit.⁴⁶² As part of its proposal, Fuma envisioned that it would be responsible for the initial testing of the plant and e-cigarette products with the ultimate goal of becoming a wholly owned subsidiary of RAI at the appropriate time.⁴⁶³
196. The 2009 Fuma proposal is not a patent license agreement. It is a proposal, and there is no evidence that the parties agreed to this proposal. In addition, the proposal does not detail which patent assets would be licensed to RJRV. The proposal also does not outline the terms of a licensing relationship, including the term, the exclusivity or the territory.

⁴⁵⁹ See Exhibit 23.

⁴⁶⁰ Reilly, Robert F. and Schweih, Robert P., Valuing Intangible Assets, 1999, pp. 157-158.

⁴⁶¹ RJRV-F000684492-RJRV-F000684497.

⁴⁶² RJRV-F000684492-RJRV-F000684497 at 495.

⁴⁶³ RJRV-F000684492-RJRV-F000684497.

parties is largely informed by the results of the Income Approach. In my opinion, the appropriate Reference Range for the Patents-in-Suit that would be considered by the parties is 14.6% to 16.6% of RJRV's Accused Net Revenue.

E. CONSIDERATION OF THE GEORGIA-PACIFIC FACTORS

227. In the well-recognized *Georgia-Pacific* case, the court set forth certain factors to be considered when determining a reasonable royalty.⁵²² These factors, commonly referred to as the *Georgia-Pacific* factors, are guidelines for evaluating the likely actions of the parties in a hypothetical negotiation. Based on the facts and circumstances of any case, the factors are not necessarily given equal weight, nor are the factors all-inclusive. Rather, the *Georgia-Pacific* factors are part of the overall analysis to determine reasonable royalty damages. Many courts, including the Court of Appeals for the Federal Circuit, have acknowledged the *Georgia-Pacific* factors for use in determining a reasonable royalty rate under the construct of a hypothetical negotiation.
228. The *Georgia-Pacific* factors and the consideration that I gave to each factor, as well as other relevant considerations regarding the facts in this Matter, are described in the balance of this section.
- 1. FACTOR 1: THE ROYALTIES RECEIVED BY THE PATENTEE FOR THE LICENSING OF THE PATENTS-IN-SUIT, PROVING OR TENDING TO PROVE AN ESTABLISHED ROYALTY**
229. As discussed previously, there is no established royalty for the Patents-in-Suit as evidence by the fact Fuma has not produced any license agreements in this Matter. Therefore, this factor has a neutral impact on the negotiated royalty rates within the Reference Range.
- 2. FACTOR 2: THE RATES PAID BY THE LICENSEE FOR THE USE OF OTHER PATENTS COMPARABLE TO THE PATENTS-IN-SUIT**
230. I have previously described my consideration of the license agreements entered into by the Defendant for its use of other patents in my discussion of the Market Approach. Therefore, this factor has a neutral impact on the negotiated royalty rates within the Reference Range.
- 3. FACTOR 3: THE NATURE AND SCOPE OF THE LICENSE, AS EXCLUSIVE OR NON-EXCLUSIVE; OR AS RESTRICTED OR NONRESTRICTED IN TERMS OF TERRITORY OR WITH RESPECT TO WHOM THE MANUFACTURED PRODUCT MAY BE SOLD**
231. In isolation, patent licenses that have territorial restrictions would bear a relatively lower royalty rate than patent licenses that do not. The present litigation relates to two United States patents which offer exclusionary rights throughout this country, without restriction.

⁵²² *Georgia-Pacific Corp. v. U. S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), mod. and aff'd, 446 F.2d 295 (2d Cir. 1971), cert. denied, 404 U.S. 870 (1971).

In addition, by 2017 RJRV was selling the Accused Products through thousands of distributors and retails to consumers across the United States without geographic limitation.⁵²³ As such, RJRV would require a license that would not have any geographical limitations or restrictions.

232. In isolation, non-exclusive patent licenses typically bear a relatively lower royalty rate than exclusive licenses because the financial benefits associated with the licensed patent do not accrue exclusively to one party. In correspondence between Fuma and RAI, exclusivity was offered when discussing the relationship between the two parties (“Fuma proposes a relationship with RAI, giving RAI exclusive rights to Fuma through a staged process mutually agreeable to both parties with the goal of risk mitigation and eventual acquisition.”).⁵²⁴ RAI did not however pursue this option.⁵²⁵
233. At the time of the hypothetical negotiation, I understand that Fuma had no plans to exit the industry. Indeed, Fuma continues to this day to commercialize Embodying Products⁵²⁶ and it is my understanding that Fuma will continue doing so – which means that at the time of the hypothetical negotiation, Fuma would not be willing to grant an exclusive license to RJRV.
234. In light of these facts, Fuma would only be willing to grant RJRV a non-exclusive license to the Patents-in-Suit at the time of the hypothetical negotiation. This factor would have a negative impact on the negotiated royalty rates within the Reference Range.

4. FACTOR 4: THE LICENSOR’S ESTABLISHED POLICY AND MARKETING PROGRAM TO MAINTAIN ITS PATENT MONOPOLY BY NOT LICENSING OTHERS TO USE THE INVENTION OR BY GRANTING LICENSES UNDER SPECIAL CONDITIONS DESIGNED TO PRESERVE THAT MONOPOLY

235. I am not aware of any evidence indicating Fuma had an established policy or marketing program to maintain a patent monopoly by not licensing others the inventions patented. This factor has a neutral impact on the negotiated royalty rates within the Reference Range.

5. FACTOR 5: THE COMMERCIAL RELATIONSHIP BETWEEN THE LICENSOR AND LICENSEE, SUCH AS, WHETHER THEY ARE COMPETITORS IN THE SAME TERRITORY IN THE SAME LINE OF BUSINESS; OR WHETHER THEY ARE INVENTOR AND PROMOTER

236. The record indicates that Fuma and RJRV are both competitors in the Cigarette and Tobacco industry. More specifically, they are both competitors in the e-cigarette sector of the Cigarette and Tobacco industry where both companies offer e-cigarettes in the United States. These conclusions are supported by the following facts:

⁵²³ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 9.

⁵²⁴ Exhibit C to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁵²⁵ Exhibit L to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁵²⁶ See Exhibit 24.

- RJRV and Fuma knew each other well.⁵²⁷
 - Fuma was one of the first companies that RJRV engaged with.⁵²⁸
 - RJRV reverse engineered Fuma's product design.⁵²⁹
 - RJRV analyzed the features of Fuma's Embodying Products.⁵³⁰
 - RJR tracked Fuma's pricing.⁵³¹
237. I also note that RJR characterized Fuma as a "strong competitor"⁵³² and that two companies had a confidentiality agreement in place from 2010 through 2015.⁵³³
238. Early on Fuma realized that it alone did not have "the funds, resources, or manpower" to manufacture at a level that an established company like RJRV could achieve.⁵³⁴ I understand that early on Mr. Conley had "dreams" of having a U.S. manufacturing plant but acknowledged Fuma's lack of resources.⁵³⁵ As evidenced in correspondence with Mr. Potter in June 2010, Fuma was looking "forward to the chance" of partnering with RJRTC.⁵³⁶ Despite the difference in financial resources each could provide, Mr. Conley believed the Fuma would contribute value to the relationship as it believed it had "everything in place" to "help catapult RJRTC into [the] market space."⁵³⁷ Based on an internal RJRTC presentation, it appears that RJRTC also weighed the benefits a partnership could provide, noting that the partnership could advance its H3 Aerosol Platform and that it could be a source of open innovation for further design.⁵³⁸
239. In a partnership proposal dated July 16, 2010, Fuma wrote to Mr. Potter stating that RAI was the "leading edge manufacturer of tobacco cigarettes and tobacco products" but had yet to enter the e-cigarette market.⁵³⁹ Fuma stated that they both had mutual interests in manufacturing and selling e-cigarettes and that the Fuma brand was "highly recognized" and was at the time "distributed through various large tobacco distributors nationwide."⁵⁴⁰ As part of the partnership proposal, Fuma would manufacture while RAI would provide the resources including marketing assistance and investment.⁵⁴¹
240. Considering these facts, it is reasonable to conclude that the parties are competitors. This factor would have an upward effect on the royalty rate for each of the Patents-in-Suit.

⁵²⁷ RJRV-F000682346 - RJRV-F000682348

⁵²⁸ RJRV-F000682346 - RJRV-F000682348

⁵²⁹ RJRV-F000686794 - RJRV-F000686795; RJRV-F000687097 - RJRV-F000687098; RJRV-F000687094

⁵³⁰ RJRV-F000686787, RJRV-F000687096; RJRV-F000686753 - RJRV-F000686784.

⁵³¹ RJRV-F000693095; RJRV-F000693313 - RJRV-F000693314

⁵³² RJRV-F000605024 - RJRV-F000605076 at 032.

⁵³³ RJRV-F000686973 - RJRV-F000686974; RJRV-F000687657

⁵³⁴ Deposition of Mr. Conley dated December 4, 2019, p. 87:1-6.

⁵³⁵ Deposition of Mr. Conley dated December 4, 2019, p. 86:14-87:11.

⁵³⁶ RJRV-F000684461 - RJRV-F000684463

⁵³⁷ Exhibit I to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁵³⁸ RJRV_F000680031.

⁵³⁹ Exhibit K to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁵⁴⁰ Exhibit K to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

⁵⁴¹ Exhibit K to the Complaint for Patent Infringement dated July 2, 2019 (1:19-cv-00660).

6. FACTOR 6: THE EFFECT OF SELLING THE PATENTED SPECIALTY IN PROMOTING THE SALES OF OTHER PRODUCTS OF THE LICENSEE; THE EXISTING VALUE OF THE INVENTION TO THE LICENSOR AS A GENERATOR OF SALES OF HIS NONPATENTED ITEMS; AND THE EXTENT OF SUCH DERIVATIVE OR CONVOYED SALES

241. I have included all of the revenue earned from the Solo and Ciro branded Kits, the Power Units, and the Cartridge Packs in the royalty base. RJRV's financial records indicate that the company earned a small amount of revenue from accessory sales. I have not included accessory revenue in my royalty base calculation. I have considered these revenues to offer a neutral impact to the negotiated royalty rate within the Referenced Range.

242. [REDACTED]

243. [REDACTED]

244. [REDACTED]

[REDACTED]

245.

7. FACTOR 7: THE DURATION OF THE PATENT AND THE TERM OF THE LICENSE

246. It is my understanding that the ‘604 Patent expires on July 27, 2030, which is approximately 13 years subsequent to the date of the hypothetical negotiation in July 2017. It is my understanding that the ‘881 Patent also expires at the same time as the ‘604 patent.
247. I note that RJRV had, at the time of the hypothetical negotiation, already invested millions of dollars into its manufacturing facilities. As noted above, RJRV recognized that its automated manufacturing processes are designed for mass production and have very little flexibility built into them for product changes.⁵⁵¹
248. Given the lengthy period that RJRV could be excluded from continued use of Fuma’s “enabling” design,⁵⁵² and in light of the fact that demand for traditional cigarettes was decreasing each year⁵⁵³ while demand for the e-cigarette was increasing,⁵⁵⁴ and the prior investments made by RJRV into its automated manufacturing facilities, this factor would have an upward impact on the negotiated royalty rate within the Reference Range.

8. FACTOR 8: THE ESTABLISHED PROFITABILITY OF THE PRODUCT MADE UNDER THE PATENT, ITS COMMERCIAL SUCCESS, AND ITS CURRENT POPULARITY

249. I previously discussed the profitability and commercial success of the Embodying Products; therefore, I will not consider this information again here. This factor has a neutral impact on the negotiated royalty rate within the Reference Range.

9. FACTOR 9: THE UTILITY AND ADVANTAGES OF THE PATENTED PROPERTY OVER THE OLD MODES OR DEVICES, IF ANY, WHICH HAD BEEN USED FOR WORKING OUT SIMILAR RESULTS

10. FACTOR 10: THE NATURE OF THE PATENTED INVENTION, THE CHARACTER OF THE COMMERCIAL EMBODIMENT OF

⁵⁵¹ RJRV-F000574468 - RJRV-F000574469 at 468.

⁵⁵² RJRV-F000678593 - RJRV-F000678605 at 602.

⁵⁵³ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing, p. 7.

⁵⁵⁴ RJRV-F00508590 – RJRV-F000508608 at 603; RJRV-F000261561 to RJRV-F000261562 at 562; IBISWorld 31222: Cigarette & Tobacco Manufacturing in the US December 2014, p. 10.

**IT AS OWNED AND PRODUCED BY THE LICENSOR, AND THE
BENEFITS TO THOSE WHO HAVE USED THE INVENTION**

250. Factors 9 and 10 are frequently analyzed together due to their similarity and overlap. I have previously discussed the utility and advantages of the technology of the patented technology over old modes or devices which had been used for working out similar results as well as the nature of the patented invention as owned and produced by the licensor and the benefit to those who have used the invention above in the Cost Approach. Therefore, I will not consider this information again here.
251. Given the facts and circumstances discussed in the Cost Approach above, and in light of the fact that my Cost Approach analysis did not result in any quantitative datapoints that impact the selection of royalties within the Reference Range, it is my opinion that the issues considered by Georgia-Pacific factors 9 and 10 have a positive impact on the negotiated royalty rate within the Reference Range.

**11. FACTOR 11: THE EXTENT TO WHICH THE INFRINGER HAS
MADE USE OF THE INVENTION AND ANY EVIDENCE
PROBATIVE OF THE VALUE OF THAT USE**

252. I have previously discussed RJRV's profitability in the Income Approach section above; therefore, I will not consider those quantitative data points again here. Instead, the analysis presented as part of this factor will address the extent to which RJRV has made use of the Patents-in-Suit and any qualitative evidence that is probative of the value of that use.
253. Demand for tobacco products continues to decline because of the current regulatory environment,⁵⁵⁵ the awareness of the negative health implications related to smoking,⁵⁵⁶ and increased excise taxes.⁵⁵⁷ Separately, industry analysts have noted increased demand for e-cigarettes which has benefited the Cigarette and Tobacco industry.⁵⁵⁸ Industry analysts anticipate that demand for e-cigarettes will continue to increase.⁵⁵⁹ RJRV's infringement has benefited the company in a way that wasn't possible without an e-cigarette—namely it can advertise a product to achieve organic growth and to capture market share.
254. The record indicates that prior to RJRV's adoption of Fuma's patented technology, RJRTC characterized Fuma's patented design as being "unique in design and operation" relative to the other vapor products analyzed.⁵⁶⁰ At this time, RJRTC also characterized Fuma's patented products as offering a different taste, flavor, and operating ritual and that it was "significant" that Fuma's product lacked a sweet aftertaste commonly associated with e-cigarettes.⁵⁶¹ RJRTC further commented that Fuma's patented device

⁵⁵⁵ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing, p. 7.

⁵⁵⁶ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing, p. 7.

⁵⁵⁷ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing, p. 8;
<https://www.tobaccofreekids.org/assets/factsheets/0275.pdf>

⁵⁵⁸ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing, p. 7.

⁵⁵⁹ IBISWorld Industry Report, November 2019, Global Cigarette and Tobacco Manufacturing, p. 7.

⁵⁶⁰ RJRV-F000684464.

⁵⁶¹ RJRV-F000684464.

had a “nice balanced feel” that had a “magic” mouth piece / aerosolizer.⁵⁶² Importantly, RJRTC also noted that Fuma’s product offered a “far closer” “cigarette experience” than other e-cigarette designs and that the Fuma product was “simple, clean, and very close to intuitive.”⁵⁶³ Relative to all of the other products on the market in 2009/2010, RJRTC noted that it saw “more potential” in Fuma’s design than “any of the others,”⁵⁶⁴ and that Fuma’s design had generated “highest interest to date”⁵⁶⁵ at RJRTC. Finally, I note that RJRTC employees were “eager” to take a look inside the Fuma e-cigarette”⁵⁶⁶ and even went so far as to characterize Fuma’s technology as “enabling.”⁵⁶⁷

255. As of February 2011, RJRTC was working to have a product on the market before April 2013.⁵⁶⁸ In a March 2011, presentation entitled “What’s Hot in the Innovation Space” RJRTC included an image of a Fuma’s e-cigarettes.⁵⁶⁹ During this period, RJRTC appears to have considered a number of alternative product concepts and designs, including various heat-not-burn, vapor, and hybrid designs.⁵⁷⁰ In the end, RJRTC decided to use Fuma’s “enabling”⁵⁷¹ design in a way that allowed it to “place a ‘bet’” on the growing e-cigarette sector.⁵⁷² I have not seen any evidence that RJRV has commercialized any of these other alternative cig-a-like designs.
256. When RJRV expanded to Colorado it took a market leadership position.⁵⁷³ RJRV reported that it had a “positive consumer response”.⁵⁷⁴ RJRV also noted that the company’s marketing did not start until September which meant that the company achieved a market leadership position in the state of Colorado before the company’s marketing efforts began.⁵⁷⁵ Detailed below is the market share growth results for Colorado as presented by RJRV.⁵⁷⁶

⁵⁶² RJRV-F000684464

⁵⁶³ RJRV-F000684464

⁵⁶⁴ RJRV-F000684464

⁵⁶⁵ RJRV-F000686997 - RJRV-F000686999 at 997.

⁵⁶⁶ RJRV-F000687094.

⁵⁶⁷ RJRV-F000196078 - RJRV-F000196091.

⁵⁶⁸ RJRV-F000046963 - RJRV-F000046977 at RJRV-F000046964.

⁵⁶⁹ RJRV-F000195869 - RJRV-F000195898 at RJRV-F000195885.

⁵⁷⁰ RJRV-F000638624 - RJRV-F000638642.

⁵⁷¹ RJRV-F000678593 - RJRV-F000678605 at 602.

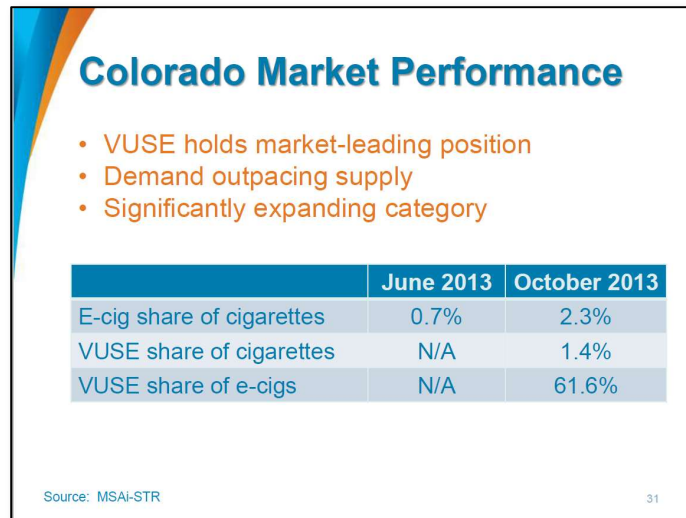
⁵⁷² RJRV-F000154458 - RJRV-F000154472 at 470.

⁵⁷³ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, page 9.

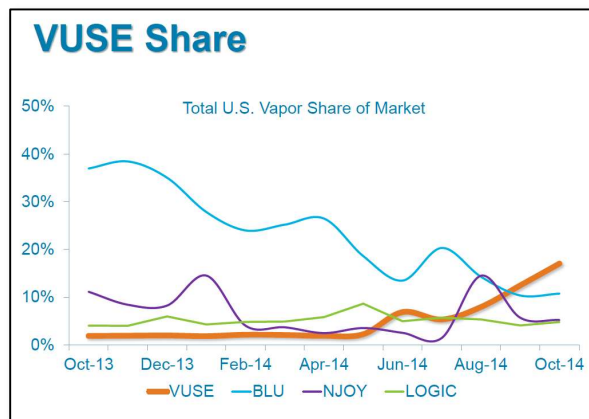
⁵⁷⁴ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, page 9.

⁵⁷⁵ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, page 9.

⁵⁷⁶ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, page 9.



257. By November 2014, the Vuse Solo was distributed in about 70,000 outlets in the U.S.⁵⁷⁷ RJRV told investors that the performance of Vuse was “astounding”.⁵⁷⁸ Vuse’s success is based in part on the fact that consumers were switching from traditional tobacco product to vapor products,⁵⁷⁹ which was one of RJRTC’s stated goals.⁵⁸⁰ According to RJRV, nearly 90% of Vuse’s sales in the lead markets are replacement cartridges indicating that smokers are switching and that the razor/razorblade model is working.⁵⁸¹ RJRV presented monthly data showing that Vuse’s share of the vapor market had increased from 0% (at product launch) to nearly 20% by October 2014.



258. By January 2017, the Vuse brand had the most market share for vapor products, with approximately a 30% share of the market in traditional channels.⁵⁸² After a few years of

⁵⁷⁷ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, page 22

⁵⁷⁸ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, page 23

⁵⁷⁹ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, page 23

⁵⁸⁰ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, Page 32

⁵⁸¹ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, page 23

⁵⁸² British American Tobacco P.L.C. M&A Call | Jan 17, 2017, Page 8.

advertising and building the Vuse brand name, RJRV launched the Vuse Ciro, an e-cigarette,⁵⁸³ and the Vuse Vibe.⁵⁸⁴

259. Each year, RAI holds an investor day where the company invites certain industry and financial analysts to a company presentation. Copied below are some of the statements made by RAI and RJRV employees regarding Vuse:

- “fundamentally different than anything that exists in the category today.”⁵⁸⁵
- “...the game changer...”⁵⁸⁶
- “...took market leadership...”⁵⁸⁷
- Vuse had a “positive response”⁵⁸⁸
- “...if this was a cigarette brand, it'd be tracking along at 1.4 share points, which is a phenomenal success...”⁵⁸⁹
- “We'd be throwing massive parties if this was a new cigarette...”⁵⁹⁰
- “...not about being first to market. It's about being best to market. So that's exactly what we did with VUSE...”⁵⁹¹
- “We are the #1 e-cig brand in the state.”⁵⁹²
- “...the feedback we've got from both our trade, our sales force, our clerks and our consumers are this is the highest level of advocacy we've ever seen on any product launch in our history.”⁵⁹³
- “The Vuse gives RJRV hope that we have opportunity now to really permanently switch smokers”⁵⁹⁴

260. As part of these presentations, RJRV highlighted commentary from select RJRV's retail customers.⁵⁹⁵ Copied below are a few of the comments regarding Vuse that RAI highlighted to investors:

- “VUSE has definitely rejuvenated the vapor category”⁵⁹⁶

⁵⁸³ Complaint for Patent Infringement dated March 6, 2019, p. 16.

⁵⁸⁴ <https://vaporvoice.net/2016/11/11/distribution-of-vuse-vibe-expanded/>

⁵⁸⁵ Reynolds American, Inc. Analysts and Investor Day, November 12, 2012 p. 39

⁵⁸⁶ Reynolds American Inc. Analyst/Investor Day, Nov 16, 2015, p. 31

⁵⁸⁷ Reynolds American Inc. Analyst/Investor Day, May 16, 2016 p.5, 12

⁵⁸⁸ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9

⁵⁸⁹ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9

⁵⁹⁰ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9

⁵⁹¹ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 28.

⁵⁹² Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 32.

⁵⁹³ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 32.

⁵⁹⁴ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 32.

⁵⁹⁵ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

⁵⁹⁶ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

- “We were in the process of developing a private label e-cigarette until the launch of VUSE...”⁵⁹⁷
- “You’re 64% of my total vapor category already...”⁵⁹⁸
- “Vuse is an excellent product”⁵⁹⁹

261. For all of these reasons, this factor would have a strong positive impact on the royalty rate within the Referenced Range.

12. FACTOR 12: THE PORTION OF THE PROFIT OR OF THE SELLING PRICE THAT MAY BE CUSTOMARY IN THE PARTICULAR BUSINESS OR IN COMPARABLE BUSINESSES TO ALLOW FOR THE USE OF THE INVENTION OR ANALOGOUS INVENTIONS

262. [REDACTED]

263. [REDACTED]

264. [REDACTED]

265. For all of these reasons, this factor has a neutral impact on the royalty rate within the Referenced Range.

13. FACTOR 13: THE PORTION OF THE REALIZABLE PROFIT THAT SHOULD BE CREDITED TO THE INVENTION AS DISTINGUISHED FROM NONPATENTED ELEMENTS, THE MANUFACTURING PROCESS, BUSINESS RISKS, OR

⁵⁹⁷ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

⁵⁹⁸ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

⁵⁹⁹ RAI, Investor Day 2014, November 17, Presentation, p. 107-108.

[REDACTED]

SIGNIFICANT FEATURES OR IMPROVEMENTS ADDED BY THE INFRINGER

266. This factor relates to an apportionment of profits to features other than the patented features. I have previously provided a quantitative assessment of the portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements of the product as part of the Income Approach. The balance of this section relates to a qualitative assessment.
267. At the time of the hypothetical negotiation, Fuma would have recognized that RJRTC, RJRV's sister company, is one of the largest tobacco companies in the U.S.⁶⁰⁵ and that RJRV's products are made in partnership with RJRTC in RJRTC's manufacturing facility.⁶⁰⁶ The record indicates that the company has invested millions of dollars for automated e-cigarette manufacturing equipment.⁶⁰⁷ In addition, Fuma would also recognize that RJRV maintained a large distribution network of thousands of retail outlets across the United States.⁶⁰⁸
268. The licensee would, under the construct of the hypothetical license agreement, be assuming risk of the manufacture and sale of the Accused Products and would seek to pay a lower royalty in order to be compensated for the assumption of such risk. This factor has a downward influence on the reasonable Royalty Range.

14. FACTOR 14: THE OPINION TESTIMONY OF QUALIFIED EXPERTS

269. This factor requires consideration of the opinion testimony of qualified experts. I understand that Dr. Vallee will submit an expert report on July 23, 2020. It is my understanding that Dr. Vallee will opine that the Patents-in-Suit are valid and infringed. Given that I have already assumed that RJRV will be found liable for infringing the Patents-in-Suit, this factor has a neutral effect on the hypothetically negotiated Royalty Range.

15. FACTOR 15: THE AMOUNT THAT A LICENSOR (SUCH AS THE PATENTEE) AND A LICENSEE (SUCH AS THE INFRINGER) WOULD HAVE AGREED UPON (AT THE TIME THE INFRINGEMENT BEGAN) IF BOTH HAD BEEN REASONABLY AND VOLUNTARILY TRYING TO REACH AN AGREEMENT, THAT IS, THE AMOUNT WHICH A PRUDENT LICENSEE— WHO DESIRED, AS A BUSINESS PROPOSITION, TO OBTAIN A LICENSE TO MANUFACTURE AND SELL A PARTICULAR ARTICLE EMBODYING THE PATENTED INVENTION— WOULD HAVE BEEN WILLING TO PAY AS A ROYALTY AND YET BE ABLE TO MAKE A REASONABLE PROFIT AND WHICH AMOUNT WOULD HAVE BEEN ACCEPTABLE BY A

⁶⁰⁵ Reynolds American Inc. Form 10-K Fiscal Year Ended December 31, 2016 p. 31

⁶⁰⁶ Reynolds American Inc. Form 10-K Fiscal Year Ended December 31, 2016 p. 8

⁶⁰⁷ <https://www.bizjournals.com/triad/news/2015/10/01/reynolds-moves-all-e-cig-production-to.html>

⁶⁰⁸ Reynolds American Inc. Form 10-K Fiscal Year Ended December 31, 2016 p. 8

PRUDENT PATENTEE WHO WAS WILLING TO GRANT A LICENSE

270. It is understood in any negotiation that the licensee would prefer to pay as little royalties as possible and the licensor would want to receive as much royalties as possible. I accept the motivations of each of the negotiating parties. The results of the *Georgia-Pacific* analysis show six factors that support a higher rate (factors 5, 6, 7, 9, 10 and 11), two factors in support of a lower rate (factors 3 and 13) and six factors have a neutral impact on the rate (factors 1, 2, 4, 8, 12, and 14). Based on all the quantitative and qualitative analyses as well the evidence discussed above, there are certain key facts the parties would be likely to focus on in negotiating the reasonable royalty.
271. The key facts strengthening Fuma's bargaining position within the hypothetical negotiation include:
- The hypothetical negotiators are competitors that sell similar products, with similar features, to similar consumers, for the same purpose. Fuma is a "strong competitor" in Ohio and would prefer to sell its own Embodying Products instead of granting a license and RJRV. This is especially true since the parties would recognize that RJRV's pricing strategy involves significant discounts that put pricing pressure on all other e-cigarette suppliers.
 - The '604 and '881 Patents do not expire until July 27, 2030 so Fuma would be able to exclude RJRV from the industry for several years.
 - Prior to its adoption of the patented technology, RJRV was looking to transform its business but had not yet launched an e-cigarette.
 - Over the years, industry analysts noted that "increasing regulation" and "rising taxes" negatively affected demand for traditional cigarettes in the Cigarette and Tobacco industry.⁶⁰⁹
 - Consumers were increasingly aware of the link between smoking and lung cancer due to anti-smoking campaigns.⁶¹⁰
 - In 2017, industry analysts expected that revenue from the sale of tobacco products would decline over the next five years to 2022.⁶¹¹
 - RJRTC previously released other smoking alternative products (Premier and Eclipse) however had discontinued those products because of low demand.⁶¹²
 - RJRTC retained multiple third-party engineering consultants to propose new design concepts that RJRV could use to enter the e-cigarette market. I understand

⁶⁰⁹ IBISWorld Industry Report C1131-GL, July 2012, Global Tobacco Manufacturing, p. 5.

⁶¹⁰ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, p. 15.

⁶¹¹ IBISWorld Industry Report, September 2017, Global Cigarette and Tobacco Manufacturing, p. 7.

⁶¹² RJRV-F000278651 to RJRV-F000278654 at 652

that instead of using the designs from these third-party engineers, RJRV elected to use the Fuma design.⁶¹³

- Fuma had a unique design and operation relative to the other vapor products on the market.⁶¹⁴
- Fuma's patented design included a "magic" mouthpiece / aerosolizer that had a "nice balanced feel."⁶¹⁵
- Fuma's design offered users a "far closer" "cigarette experience" than other e-cigarette designs⁶¹⁶ and was "simple, clean, and very close to intuitive use."⁶¹⁷
- There are no commercially acceptable, non-infringing alternative methods, other than by using the Patents-in-Suit, of offering customer product that is "satisfying, intuitive, simple, familiar, and that has a pleasant taste".⁶¹⁸
- Fuma's designs allowed RJRV to "advance their aerosol platform in a way that would allow them to "place a bet" in a "promising e-cig approach."⁶¹⁹
- RJRV could not modify the design of the Vuse Solo device at the time of the hypothetical negotiation because the company was operating in a "regulated environment."⁶²⁰ [REDACTED]

- RJRV used the Patents-in-Suit to introduce a "game changing" product and to obtain a "market leading" position.⁶²³
- The performance of Vuse was "astounding."⁶²⁴ And RJRV experienced the "highest level of advocacy ever seen on any product launch in RAI's history."⁶²⁵
- "The Vuse inspired hope that RJR could permanently switch smokers".⁶²⁶

272. The key factors strengthening RJRV's bargaining position within the hypothetical negotiation include:

⁶¹³ RJRV-F000195869 - RJRV-F000195898; RJRV-F000686792 - RJRV-F000686793; RJRV-F000195717 - RJRV-F000195741.

⁶¹⁴ RJRV-F000684464.

⁶¹⁵ RJRV-F000684464.

⁶¹⁶ RJRV-F000684464.

⁶¹⁷ RJRV-F000684464.

⁶¹⁸ RJRV-F000158250 to RJRV-F000158276 at 256.

⁶¹⁹ RJRV-F000154458 - RJRV-F000154472 at 4470.

⁶²⁰ Deposition of Jason Short, June 16, 2020, page 118:1-7, 118:15-22; 89:16-24, 90:1-91:8.

⁶²² RJRV-F000574468 - RJRV-F000574469 at RJRV-F000574468.

⁶²³ <https://www.cnbc.com/id/100796458>; Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 9.

⁶²⁴ Reynolds American Inc. Analyst/Investor Day, Nov 17, 2014, p. 23.

⁶²⁵ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 32.

⁶²⁶ Reynolds American Inc. Analyst/Investor Day, Nov 18, 2013, p. 32.

- RJRV assumes the business risk associated with the development, testing, manufacturing, selling and support of the Accused Products. In addition, RJRV would leverage its own marketing and promotional efforts.
 - The hypothetical license would be non-exclusive in nature.
273. Based on my analysis of the *Georgia Pacific* factors and relative bargaining positions of Fuma and RJRV, I have concluded that the hypothetical negotiation in this case suggests that Fuma has a stronger bargaining position than RJRV.

F. CALCULATION OF REASONABLE ROYALTY DAMAGES

274. The determination of a reasonable royalty, from an economic perspective, involves valuation of intangible asset(s) and determining what a seller would pay and a buyer would accept for the use of the asset(s). I have developed conceptual reference points based on the minimum a licensor would be willing to receive and the maximum a licensee would be willing to pay, as discussed in the American Institute of Public Accountants' consulting guide, "Valuing Intellectual Property and Calculating Infringement Damages."⁶²⁷ I have considered the three standard quantitative valuation methods, referred to as the market, income and cost approaches, in developing these reference points. My approach in utilizing each valuation method is summarized below.
275. The agreements considered under the Market Approach (*Georgia-Pacific* Factors 1, 2 and 12) do not offer an indication as to the royalty amount that would be considered by the parties at the hypothetical negotiation. Under the Cost Approach (*Georgia-Pacific* factors 9 and 10), I noted the lack of commercially acceptable non-infringing alternative solutions that offer benefits that are comparable. In light of the facts and circumstances of this Matter, my royalty rate is guided by the Income Approach (*Georgia-Pacific* factors 8 11 and 13), as summarized below.
- **Analysis of RJRV's Profits:** Within the context in which RJRV earns profits from the sale of Accused Products, the parties would have contemplated royalty rates of 14.0% to 16.6%.
 - **Analysis of Fuma's Profits:** Within the context in which Fuma intended to use the Patents-in-Suit, the parties would have contemplated a royalty rate of 16.1%
276. In light of the facts and circumstances as summarized in this report that would be considered by the parties to the hypothetical negotiation, it is my opinion that the parties would consider a royalty rate that ranged from 14.0% to 16.6%.⁶²⁸
277. Within the framework suggested by the *Georgia-Pacific* factors, and in light of the circumstances that would have applied to the hypothetical negotiation, the parties would note the changing landscape of the Cigarette and Tobacco industry and e-cigarette sector, RAI's prior inability to develop a commercially successful product that would switch its

⁶²⁷ Michael Mard and Joseph A. Agiato, Jr., Valuing Intellectual Property & Calculating Infringement Damages, AICPA Practice Aid 99-2 (1999).

⁶²⁸ It is my understanding that the Federal Circuit has endorsed the use of a royalty rate based on the percentage of sales of the end product price where the apportionment occurs in the royalty rate. *Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prod. Grp., LLC*, 879 F.3d 1332, 1338 (Fed. Cir. 2018).

consumers away from traditional cigarettes, the lack of a commercially acceptable non-infringing alternative design, RJRV's own instruction to its employees not to redesign the Accused Products due to regulatory regulations, and Fuma's "magic" and "game-changing" design that provided a vaping experience that was familiar, intuitive, satisfying, and simple. The parties would also recognize that RJRV was a large company with the resources and relationships to sell the Accused Product nationally and that the agreement would have been structured on non-exclusive terms. In light of all of these facts, it is my opinion that the parties would negotiate a final royalty at the low end of the Reference Range (14.0%).

XIV. DAMAGES CONCLUSIONS

278. As noted above, I have performed two scenario analyses. The first scenario assumes a Net Revenue growth rate of 3% while the second scenario assumes a Net Revenue growth rate of [REDACTED]
279. If liability is found with respect to the Patents-in-Suit, and the fact finder structures the reasonable royalty as a running royalty, then Fuma would be entitled to collect reasonable royalty damages that range from [REDACTED] for the infringement of the Patents-in-Suit from July 1, 2017 through March 31, 2021.⁶²⁹
280. If liability is found with respect to the Patents-in-Suit, and the fact finder structures the reasonable royalty as a lump sum, then Fuma would be entitled to collect reasonable royalty damages that range from [REDACTED].⁶³⁰ The first amount is calculated assuming a 3% growth rate and a 12.46% discount rate. The second amount is calculated assuming an [REDACTED] growth rate and a 11% discount rate.

XV. POSSIBLE REVISIONS TO THIS REPORT

281. The opinions expressed herein are based on the information made available to me as of the date of this report. I reserve the right to review any information produced by the parties subsequent to the date of this report and update this report as necessary to reflect any additional analysis and conclusions. In addition, if the Defendant submits any additional opinions regarding damages, I reserve the right to review these analyses and respond if necessary.

XVI. PROFESSIONAL FEE ARRANGEMENT

282. My billing rate is \$450 per hour for services performed in connection with this matter. In addition, I will be reimbursed for all reasonable out-of-pocket expenses incurred in connection with my analyses and testimony in this case. Neither my compensation, nor Stout's compensation, is dependent on the outcome of this matter or the opinions expressed in this report.


Stephen Holzen
July 23, 2020

⁶²⁹ See Exhibit 1.

⁶³⁰ See Exhibit 1.